



Business, Transportation  
and Housing Agency

Report to the Legislature

---

# CALIFORNIA HIGHWAY PATROL ENHANCED RADIO SYSTEM

Prepared by  
California Highway Patrol



M. L. Brown, Commissioner  
February 2007

## **Table of Contents**

LEGISLATIVE EXECUTIVE SUMMARY .....	ii
INTRODUCTION .....	1
BACKGROUND/HISTORY .....	1
FIRST YEAR ACCOMPLISHMENTS.....	4
EXPENDITURES FOR 2006/2007 FISCAL YEAR .....	6
UPDATES/CHANGES TO PROJECT SCOPE .....	8
Statewide System Design.....	8
Radio Vault Site Surveys.....	9
700 MHz Spectrum Acquisition.....	12
Mobile/Portable Radio Acquisition .....	12
Consolidated Patrol Vehicle Environment (CPVE) .....	13
Personnel Years (PYs).....	13
Risk Assessment and Mitigation Consultant.....	15
Multi-Radio System Program Manager.....	15
ALLIED AGENCY INTEROPERABILITY .....	16
CONSULTANT CONTRACTOR CONFERENCE .....	17
CONCLUSIONS.....	17
<b>ANNEXES</b>	
ANNEX A	CHPERS Expenditures, Fiscal Year 2006/2007
ANNEX B	CHPERS Telecommunications Equipment Cost Estimate
ANNEX C	Summary of DGS Remote Site Budget Packages for Valley and Central Divisions
ANNEX D	Quarterly CHPERS Status Reports

## LEGISLATIVE EXECUTIVE SUMMARY

Assembly Bill (AB) 1801, Budget Act of 2006, item 2720-001-0044, provided the California Highway Patrol (CHP) funding for the enhancement of the existing public radio system by adding additional frequency spectrum, purchasing and replacing outdated equipment, providing a solution for integrating various technologies into a patrol vehicle environment, and modernizing an aging infrastructure. The CHP Enhanced Radio System (CHPERS) provides for the development and implementation of an effective and efficient radio communications system, improve internal and external services, and enable radio interoperability with allied agencies during joint tactical operations and emergency incidents.

In its January 2006, report to the Legislature entitled *“2006 Statewide Integrated Public Safety Communications Strategic Plan,”* the Public Safety Radio Strategic Planning Committee (PSRSPC) declared its support for the CHP’s CHPERS project and described the CHP’s efforts towards radio interoperability as being “commendable and important.” In doing so, PSRSPC also found the CHPERS project to be “consistent with the Committee’s goals and objectives.”

Assembly Bill 1801 provided the CHP with \$56,380,000 for tasks to be completed during the 2006/2007 fiscal year of CHPERS. Those tasks and objectives for the 2006/2007 fiscal year include: the purchase of new equipment; development of an improved system design; renovation and development of radio vault sites; acquisition of 700 MHz frequency spectrum; development of a Consolidated Patrol Vehicle Environment (CPVE) solution; coordination with local allied agencies for radio interoperability; and hiring additional personnel, as well as consultants to achieve the project objectives.

Of the \$56,380,000 allocated for CHPERS for the 2006/2007 fiscal year, CHP anticipates expending approximately \$36,579,378 on equipment, Department of General Services (DGS) engineering and technical services, and consulting services in support of the objectives outlined above.

To date, during the 2006/2007 fiscal year, the CHP, in conjunction with DGS, has achieved the following:

- Operational and technical specifications were developed by CHP and DGS for the mobile very high frequency (VHF) low band, VHF high band, ultra high frequency (UHF), vehicular repeater system (VRS), and 700/800 MHz portable radios. Requisitions for the equipment have been submitted to DGS and are currently in the procurement process and on track for completion during the 2006/2007 fiscal year.
- The CHP and DGS are continuing to refine the overall CHPERS design as specified.

- The CHP and DGS jointly conducted 85 radio vault sites surveys within Central and Valley Division. The surveys were conducted to inventory and evaluate the existing sites, determine the feasibility and potential costs associated with developing those existing radio sites, and/or to identify new radio vault sites necessary for the implementation of CHPERS. CHP and DGS conducted a comprehensive examination of each site under extremely tight timeframes, and DGS has worked diligently to complete draft budget proposal packages for the CHP's review. The CHP's Risk and Mitigation (RAM) consultant is currently reviewing the draft budget packages.
- A formal request was submitted by CHP to the Public Safety Radio Strategic Planning Committee for the acquisition of 25 pairs of frequency in the 700 MHz spectrum. The CHP will migrate to the 700 MHz spectrum to provide extended coverage for the portable extender and improve in-building penetration.
- Operational and technical specifications were initially developed by CHP and an internal Request for Information (RFI) was conducted for the CPVE portion of the CHPERS project. The specifications were submitted to DGS for review. CHP and DGS jointly worked on the development of final specifications for vendor solicitation; however, DGS advised that a second RFI was necessary due to the complexity of the technologies involved. It was decided that the CPVE and the Vehicular Repeater System (VRS) needed to be combined into a single package. DGS has distributed the RFI and CHP is currently working with DGS to review the responses. The CPVE procurement is dependent upon a successful award of the mobile radio systems, which is anticipated May 2007. The requirements for the CPVE procurement will be based on the outcome of the mobile radio system procurements. The development of the requirements will be a joint effort between DGS Procurement, DGS/TD and CHP. Due to the complexity of the CPVE procurement and the various steps associated with a Request for Proposal, DGS anticipates that this procurement will be completed by the end of February 2008. The projected \$36,579,378 of the first year expenditures takes into consideration that the \$16,387,000 allocated for the CPVE equipment will not be expended this year. CHP will disencumber the funds and submit a budget change proposal (BCP) for the sixth year in order to complete statewide distribution of CPVE equipment. CPVE purchases in future fiscal years will continue as scheduled.
- The CHP continues to coordinate with the PSRSPC, as well as state, federal, and local agencies to ensure future interoperability through CHPERS.

- The CHP has hired staff as authorized through AB 1801 and has contracted with two consultants to assist with the project. The RAM consultant is tasked with providing mitigation and risk assessment management of the statewide radio system as recommended by DOF during the budget process. The Multi-Radio System Project Manager consultant is tasked with providing oversight of the project plan and assist with the status and reporting of the statewide radio system.

In addition to the tasks and objectives outlined above, AB 1801 also mandates that on March 1, 2007, and each March 1 thereafter until the project is fully implemented, CHP shall report the status of the project to the appropriate fiscal and policy committees of the Legislature and the Joint Legislative Budget Committee. This report shall include revised estimates of total project costs and activities, any changes in project scope, and any adverse effects to interoperability with regards to new technologies used by allied agencies.

This report contains a comprehensive look of the each of the tasks and objectives requested by the Legislature, and it chronicles the significant activities and milestones attained during the first year of this project. During the budget process in 2006, both CHP and DGS stated that the on-site inspection of remote radio sites within Valley and Central Divisions during the first year of CHPERS would be of paramount importance in determining the potential costs associated with possible remote site upgrades. The information obtained from those sites has been invaluable in helping to develop a detailed inventory of those sites, including the physical condition of the sites themselves, equipment on-hand, future capabilities, maintenance requirements, etc., as well as detailed information regarding the overall condition of the state's remote radio site infrastructure.

As previously mentioned, DGS has recently submitted draft budget packages for each of the radio vault sites, which are currently under review by the CHP's RAM consultant. A preliminary review of the first several packages delivered to CHP suggests potential radio vault site costs, which greatly exceed those first anticipated by CHP. With that said, CHP and DGS are committed to keeping the CHPERS project within its allocated budget, even if it means scaling down the overall size of the project, while maintaining those items essential to improving the safety and integrity of the CHP's public safety radio system. The CHP remains confident the CHPERS project can still achieve its stated goal of greatly enhancing the current public safety radio system, while staying within the budget presently allocated. The CHPERS project continues to be a critical endeavor in order to address the CHP's aging radio communications infrastructure and in doing so will help to improve radio operability and interoperability, thereby enhancing public safety and the protection of state assets.

## **INTRODUCTION**

The California Highway Patrol Enhanced Radio System (CHPERS) project is a five year plan which will provide for the development and implementation of an enhanced statewide radio communications system in support of the California Highway Patrol's (CHP) mission to provide safety, service, and security to the public. The CHPERS project will provide an improved state-of-the-art radio system vital for officer safety and the public safety needs of the citizens of California. The CHPERS project will employ modern methodologies to enhance and leverage the existing infrastructure, meet the future operational needs, as well as meet the goals to provide interoperability at the local, regional, and federal level.

Assembly Bill (AB) 1801, Budget Act of 2006, item 2720-001-0044, gave CHP the spending authority in support of the first year objectives for the CHPERS project. The objectives for the first year include: the purchase of new equipment; development of an improved system design; renovation and development of radio vault sites; acquisition of 700 MHz frequency spectrum; development of a Consolidated Patrol Vehicle Environment (CPVE) solution; coordination with local allied agencies for radio interoperability; and hiring additional personnel, as well as consultants to achieve the project objectives. Of the amount appropriated in AB 1801, \$56,380,000 was provided for the CHPERS project in the 2006/2007 fiscal year. AB 1801 also mandates that on March 1, 2007, and each March 1 thereafter until the project is fully implemented, CHP shall report the status of the project to the appropriate fiscal and policy committees of the Legislature and the Joint Legislative Budget Committee. This report shall include revised estimates of total project costs and activities, any changes in project scope, and any adverse effects to interoperability with regards to new technologies used by allied agencies.

## **BACKGROUND/HISTORY**

The CHP's existing fixed radio system (infrastructure) has not changed since the early 1960s and will require major enhancements in order to eliminate all the existing deficiencies. The CHP is essentially the only public safety agency still using low-band very high frequency (VHF) frequencies and cannot communicate directly with other public safety agencies. The design does not support tactical and emergency communication operations. Replacement parts and components for the base stations and mobile radio equipment are no longer available from the original equipment manufacturer or after-market sources.

In 1994, the Department of General Services/Telecommunications Division (DGS/TD), in conjunction with the ten largest state public safety agencies, proposed to implement a statewide public safety radio communications system and established the Public Safety Radio Integrated System Management (PRISM) project to address the issue of interoperability between state agencies. This project included discarding the existing radio infrastructure and replacing it with an entirely new radio system.

In 1995, DGS contracted with a consultant to assess the state's public safety radio systems and make recommendations regarding the necessary steps to both replace the current CHP system, and enhance interoperability among state agencies. As a result, a report was completed entitled *"Partnering for the Future – A Strategic Plan for California's Public-Safety Radio Communications."* The report reviewed various alternatives available to the state and concluded that, in light of necessary actions to support the CHP, a system providing for interoperability should also be developed using new technology.

In 1997, statistical information was provided by each state agency to DGS and the data was compiled to quantify and qualify the number of radio channels required to provide sufficient radio channel capacity and performance coverage modeling for each agency. The Federal Communications Commission (FCC) reallocated television channels 60-69 (746-806 MHz) for public safety; however, state public safety agencies cannot use this spectrum until the commercial broadcast stations have migrated to their newly assigned digital broadcast channels of which they are mandated to comply by 2009.

The cost of the PRISM project was estimated at \$3.5 billion over a 15-year period, of which \$1.6 billion was estimated for CHP alone. Due to the cost, the bulk of which would have been allocated from the Motor Vehicle Account, and the time involved for the PRISM project, the CHP elected to withdraw from the project. As a result, CHP developed a proposal to enhance and develop the CHP's existing aging infrastructure, meet future operational needs, and meet the goals for interoperability at the local, regional, and federal levels. In 2005, the CHPERS proposal was submitted to the Department of Finance (DOF) for review.

The CHPERS proposal was developed in conjunction with DGS and seeks to leverage the state's existing investments and the current communications infrastructure. The proposal also provides the ability to expand the system to meet new needs by utilizing existing resources and would greatly benefit from DGS/TD's current efforts to upgrade the state's existing microwave system to an all digital format.

In its January 2006, report to the Legislature entitled *"2006 Statewide Integrated Public Safety Communications Strategic Plan,"* the Public Safety Radio Strategic Planning Committee (PSRSPC) documented its support of the CHPERS project. In doing so, they acknowledged the CHP's efforts towards radio interoperability through CHPERS as being "commendable and important," and found the project to be "consistent with the Committee's goals and objectives."

After review of the CHPERS proposal by Business, Transportation and Housing Agency, DOF, and the Legislative Analyst's Office, CHP was requested to conduct a Peer Review of the proposed radio system enhancement. The purpose of the Peer Review was to identify how best to leverage existing communications system resources and to evaluate the proposed radio system.

In December of 2005, the CHP solicited a Peer Review Response from participants representing a cross section of multiple state and local public safety agencies. The individuals asked to review the proposal were selected due to their extensive knowledge and experience in public safety radio communications and related disciplines. The participants were provided a comprehensive package outlining the CHP's proposed channel plan, the conceptual system design, the addition of low band frequencies, and the implementation of new technology in the 700 MHz spectrum. The participants provided in-depth responses based on experience while upgrading their respective radio systems. Westin Engineering, Inc., was selected to evaluate the responses, as well as the proposed CHPERS project and provide a detailed report of the proposed project.

The goal of the report was to obtain information for use in determining whether the methodology proposed to enhance the CHP's existing radio communications system was a sound and viable solution. The final report provided by Westin Engineering, Inc., supports the CHP's efforts to invest the necessary resources to enhance the current VHF low band system and substantiates that the current radio system is outdated and does not meet the operational requirements of the Department. The consensus among the participants is that CHP has addressed the present, as well as future operational needs utilizing a conservative approach with low risk factors in order to ensure operability while laying the groundwork for interoperability.

The CHP's conceptual system design includes:

- ◆ Requirement for expansion or new vaults and/or towers at 301 radio vault sites (remote radio sites) which provide statewide low band communications.
- ◆ A VHF Lowband Channel Plan designed to address limitations in the existing CHP radio system with the addition of more frequencies to expand the number of channels available for statewide, Division, and local command areas giving CHP the ability to separate emergency and non-emergency traffic.
- ◆ The use of the newly available 700 MHz radio band for portable radio coverage in buildings and to extend portable to portable radio range from 400-500 feet to 1-2 miles.
- ◆ Consolidate critical equipment used by patrol officers with a product that will provide a single point of control for all devices and free-up space in the passenger compartment by moving the devices into the trunk of the vehicle. This system is called the CPVE.
- ◆ Separation of primary/secondary channels with the installation of separate primary and secondary base stations at each radio site.



The CHP's operational requirements include:

- ◆ Replacement of radio system infrastructure such as base stations, mobile, and portable radios, and equipment for remote radio sites, as well as ensuring the CHP receives high-quality radio equipment in a competitive bidding environment.
- ◆ Ensuring new radio equipment purchases are compliant with Project 25 communications systems standards which were created by public safety and federal communications professionals to help ensure future interoperability. The new radio equipment will enhance the Department's operational capabilities and help provide interoperability with local, state, and federal first responders.
- ◆ Providing interoperability with the installation of multiple frequency band radios (VHF lowband, VHF highband, ultra high frequency [UHF], 700 MHz, and 800 MHz) in patrol vehicles to allow uniformed personnel to communicate with other public-safety agencies.
- ◆ Integration of gateway solutions (interoperability) in all incident command vehicles, platforms, and communications centers.

The primary goal of the CHPERS project is to apply modern technologies and methodologies to enhance the CHP's radio communications system while leveraging the existing infrastructure. To that end, DGS, in conjunction with the CHP, continues to refine the radio system design, operational and technical specifications for equipment, as well as identify remote radio vault site requirements, and apply for the acquisition of additional frequency spectrum.

## **FIRST YEAR ACCOMPLISHMENTS**

Assembly Bill (AB) 1801 requires this report to address, at a minimum, all of the following:

- A revised estimate of total project costs and activities, by fiscal year, including separate reporting on the categories of mobiles, portables, remote site equipment, Department of General Services costs;
- A description of any changes in the project scope including the type and number of hardware units needed, and changes to the frequencies used; and
- A description of any adverse effects to interoperability caused by changes in usage of new technology by local agencies or other state agencies.

Assembly Bill 1801 provided the CHP with \$56,380,000 for tasks to be completed during the 2006/2007 fiscal year of CHPERS. Those tasks and objectives for the

2006/2007 fiscal year include: the purchase of new equipment; continued refinement of an improved system design; renovation and development of radio vault sites; acquisition of 700 MHz frequency spectrum; development of a CPVE solution; coordination with local allied agencies for radio interoperability; and hiring additional personnel, as well as consultants to achieve the project objectives.

Of the \$56,380,000 allocated for CHPERS for the 2006/2007 fiscal year, CHP anticipates expending approximately \$36,579,378 on equipment, DGS engineering and technical services, and consulting services in support of the objectives outlined above.

Operational and technical specifications were developed by CHP and DGS for the mobile VHF low band, VHF high band, UHF, vehicular repeater system (VRS), and 700/800 MHz portable radios. Requisitions for the equipment have been submitted to DGS and are currently in the procurement process and on track for completion during the 2006/2007 fiscal year.

The DGS, in conjunction with the CHP, is continuing to work on the overall CHPERS design as specified.

The CHP and DGS jointly surveyed 85 remote vault sites within Central and Valley Division. The surveys were conducted to inventory and evaluate the existing sites, determine the feasibility and potential costs associated with developing existing sites, and/or to identify new sites necessary for the implementation of CHPERS. Of the sites surveyed, DGS identified 71 sites require some level of renovation or development for the CHPERS system design.

The CHP and DGS conducted a comprehensive examination of each of those sites under extremely tight timeframes and DGS worked diligently to complete draft budget proposal packages for the CHP's review. Those draft budget packages were submitted to CHP at the beginning of February 2007 and are currently being reviewed by DGS and CHP to verify that the scope is correct and to look for opportunities for cost savings. The CHP's Risk and Mitigation (RAM) consultant is currently reviewing those packages and also evaluating alternatives to mitigate potential costs and stay within the authorized budget. Additional information on the status of the remote site assessment is contained on Page 9 under "Radio Vault Site Surveys."

Operational and technical specifications were initially developed by CHP and an internal Request for Information (RFI) was conducted for the CPVE portion of the CHPERS project. CHP and DGS jointly worked on the development of final specifications for vendor solicitation; however, DGS advised that a second RFI was necessary due to the complexity of the technologies involved. It was decided that the CPVE and the VRS needed to be combined into a single package. DGS has distributed the RFI and CHP is currently working with DGS to review the responses. The CPVE procurement is dependent upon a successful award of the mobile radio systems, which is anticipated May 2007 and the requirements for the CPVE procurement will be based on the outcome of the mobile radio system procurements. The development of those

requirements will be a joint effort between DGS Procurement, DGS/TD and CHP. Due to the complexity of the CPVE procurement and the various steps associated with a Request for Proposal, DGS anticipates that this procurement will be completed by the end of February 2008. The projected \$36,579,378 of the first year expenditures takes into consideration that the \$16,387,000 allocated for the CPVE equipment will not be expended this year. CHP will disencumber the funds and submit a budget change proposal (BCP) for the sixth year in order to complete statewide distribution of CPVE equipment. CPVE purchases in the remaining fiscal years will continue as scheduled. Additional information on the status of the CPVE procurement is contained on Pages 7 and 13 under "Consolidated Patrol Vehicle Environment."

In order to address limitations in the current CHP radio system in terms of frequency spectrum, the CHP and DGS have worked diligently to acquire additional VHF lowband frequencies to expand the number of channels available for statewide, Division, and local command areas. The expansion of channel capacity will also provide CHP with the ability to separate emergency and non-emergency traffic. To date, DGS indicates they have acquired sufficient number of additional VHF lowband frequency pairs to accommodate the expansion of channels for CHPERS. CHP and DGS will continue to monitor the availability of VHF lowband frequencies and pursue additional channel capacity wherever possible.

A formal request was submitted by CHP to the Public Safety Radio Strategic Planning Committee for the acquisition of 25 pairs of frequency in the 700 MHZ spectrum. The CHP will migrate to the 700 MHZ spectrum to provide extended coverage for the portable extender and improve in-building penetration. With the exception of the CPVE purchase discussed above, hardware and frequency spectrum acquisition are continuing as originally planned.

## **EXPENDITURES FOR 2006/2007 FISCAL YEAR**

Assembly Bill 1801, Budget Act of 2006, Item 2720-001-0044 provided \$56,380,000 in funding for the enhancement of the CHP's radio system. Of this amount, CHP anticipates approximately \$36,579,378 will be expended for the purchase of radio equipment, DGS services, radio vault site evaluations, and personnel (see Annex A and B) by the end of fiscal year 2006/2007. **Note:** This projected amount is contingent upon the successful completion of the purchases specified below by DGS/CHP. The following is a breakdown and distribution of the funds received pursuant to AB 1801:

- **DGS Services** – At the request of DGS, and with the concurrence of DOF, \$2,150,000 was transferred to the DGS Architectural Revolving Fund for the preparation of schematic plans, cost estimates, and real estate review related to the renovation and development of CHP remote radio sites in Valley and Central Divisions. It is estimated that DGS/Real Estate Services Division (RESA) will require an additional transfer of \$2,300,000 for a similar effort related to radio vault sites in Northern and Coastal Divisions; however, this will only be considered by CHP after appropriate legislative review. In addition, \$639,234

was expended for DGS/Telecommunications Division (TD) for engineering services from July through October 2006. Projected costs for the remaining eight months of fiscal year 2006/2007 total \$1,816,000, and are based on the current average monthly costs for DGS engineering services.

- **Remote Site Equipment** - Purchase requisitions were submitted in the amount of \$193,950 for temporary vaults for use during the renovation and development of the remote radio sites.
- **Mobile Radios** - Requisitions were submitted to DGS for approximately \$14,494,317 to purchase VHF low band, VHF high band, UHF trunked, and 700/800 MHz trunked mobile radios.
- **Portable Radios and Accessories** – Requisitions were submitted to DGS for the purchase of 700/800 MHz portable radios, battery chargers, and accessories totaling approximately \$16,243,784.
- **Consolidated Patrol Vehicle Environment** – As stated previously, operational and technical specifications were initially developed by CHP and an internal RFI was conducted for the CPVE portion of the CHPERS project. The specifications were submitted to DGS for review. CHP and DGS jointly worked on the development of final specifications for vendor solicitation; however, DGS advised that a second RFI was necessary due to the complexity of the technologies involved. It was decided that the CPVE and the VRS needed to be combined into a single package. DGS has distributed the RFI and is currently working with CHP to review the responses. The CPVE procurement is dependent upon a successful award of the mobile radio systems, which is anticipated May 2007 and the requirements for the CPVE procurement will be based on the outcome of the mobile radio system procurements. The development of those requirements will be a joint effort between DGS Procurement, DGS/TD and CHP. Due to the complexity of the CPVE procurement and the various steps associated with a Request for Proposal, DGS anticipates that this procurement will be completed on or about February 2008. The projected \$36,579,378 of the first year expenditures takes into consideration that the \$16,387,000 allocated for the CPVE equipment will not be expended this year. CHP will disencumber the funds and submit a BCP for the sixth year in order to complete statewide distribution of CPVE equipment. CPVE purchases in the remaining fiscal years will continue as scheduled.
- **Risk Assessment and Mitigation (RAM) Consultant** – At the request of DOF, CHP contracted with a vendor for a RAM consultant to provide project oversight as an independent reviewer and system analyst, and to provide risk management assessment. A contract was established in January 2007 for 24 months with Auriga Corporation. The appointed consultant has over 30 years of experience in the design and implementation of telecommunications systems including fiber optic and microwave systems. He has an exceptional understanding of the

technology, operations, business economics and regulatory requirements of telecommunications systems in the United States (U.S.) and other countries. The projected expenditures for the contract in fiscal year 2006/2007 total \$107,316. Additional details regarding the RAM consultant is contained on Page 15 under "Risk Assessment and Mitigation Consultant."

- **Multiple Radio Systems Project Manager (MRS-PM)** – The initial contract for the MRS-PM was terminated due to the inability of the consultant to meet the expectations contained in the Statement of Work. A total of \$69,377 was expended on the initial contract. Upon termination of the initial contract, CHP immediately established internal project management oversight in the interim until a new contract could be executed. In January 2007, CHP made a conditional offer to contract with Sabot Technologies for a period of 24 months to provide project oversight and assistance with the project management, planning, and implementation. The selected project manager is certified by the Project Management Institute with a background in engineering, and has over 14 years of experience managing information technology and engineering projects, and in product development and professional services. Pending the award of the MRS-PM contract, the projected expenditures for the new contract in fiscal year 2006/2007 total \$112,400. Additional information regarding the MRS-PM is contained on Page 15 under "Multi-Radio System Project Manager."
- **Personnel Years (PYs)** – CHP received position authority and funding allocation of \$753,000 for 10 additional PYs. The additional PYs include: two full-time Associate Information Systems Analysts (AISA); three full-time Telecommunications Systems Analyst IIs (TSA IIs); four full-time Electronic Technicians; and one full-time Warehouse Worker. Of the 10 positions, eight have been filled. The remaining positions are currently in the hiring process.

See Annex A for a list of projected CHPERS expenditures for fiscal year 2006/2007 and Annex B for CHPERS Telecommunications equipment cost estimates.

## **UPDATES/CHANGES TO PROJECT SCOPE**

### Statewide System Design

The Department of General Services was tasked with developing the most reliable, feasible, time manageable, and cost efficient radio system for CHP. Originally, the CHPERS project planned for a system design which was based on a statewide simulcast system. However, due the high costs associated with simulcast equipment, limitations in regards to the current location of the radio sites, as well as the potential costs and time associated with acquiring additional radio sites, it was decided to retain simulcast and vote and steer radio systems where they currently exist. As part of CHPERS, CHP and DGS will continue to explore opportunities to further enhance existing vote and steer systems through global positioning satellite and/or other available technologies. Retaining the joint simulcast and vote and steer design also

helps keep the project within the boundaries and expectations of the funding and timelines already approved by DOF. The primary objectives of the system design include:

- ◆ Allow the primary and secondary frequencies to operate from separate stations in order to use both frequencies simultaneously in the same operational area.
- ◆ Automatically broadcasting the mobile transmission over a wide area so that all mobile and portable units have the ability to monitor every mobile transmission.
- ◆ Allow multiple communications centers in the same division to share the common control equipment resources from one central location utilizing the existing CHP Local Area Network/Wide Area Network.
- ◆ Splitting frequency designations into smaller regions by re-utilization of frequencies throughout the state.
- ◆ Consolidation of rack space or relocation of users at vault sites owned by the CHP.
- ◆ Continue the acquisition of frequency spectrum in VHF high band for future integration/migration for better efficiency and area coverage.

### Radio Vault Site Surveys

Site survey teams comprised of DGS/RESO Rights Representation, RESO Construction Management, RESO Environmental Planner, RESO Civil and Structural Engineer, DGS/TD Engineering, DGS Project Management Branch and CHP/Telecommunications Section (TS) surveyed 85 remote vault sites within Central and Valley Division. The surveys were conducted to inventory and evaluate the existing sites, determine the feasibility and potential costs associated with developing existing sites, and/or to identify new sites necessary for the implementation of CHPERS. Of the sites surveyed, DGS identified 71 sites require some level of renovation or development for the CHPERS system design.

The CHP and DGS conducted a comprehensive examination of each of the sites under extremely tight timeframes and DGS/RESO documented pertinent data regarding each site's current configuration and condition, environmental concerns, electrical power, tower height, vault size, and the availability of resources, if expansion is required and developed a website which includes photos of the facilities, surrounding areas, and road access which is available to DGS and CHP personnel, as well as the consultants assigned to the CHPERS project. The information captured during the radio vault site surveys will benefit all state agency users of the state radio vault site infrastructure. Additionally, this information will most likely benefit the PSRSPC in their effort to inventory state communication assets and develop a plan for improvement of the system, as well as local public safety agencies that have equipment located at these radio vault sites.

Based on the decision not to implement a statewide simulcast system, as articulated under the heading "Statewide System Design," DGS estimates that only 71 of the radio vault sites surveyed in Central and Valley Division will require some level of renovation or development for the CHPERS system design. In an effort to meet the timeframes necessary for CHP to consider submitting a Spring Finance Letter, DGS/RESO has worked diligently to prepare draft budget proposal packages for each of the 71 identified radio vault sites in Central and Valley Division.

Due to the amount of work involved in preparing detailed budget packages for each of those sites, DGS/RESO informed CHP during the site visit process that draft budget packages would most likely not be available for CHP review until late January or early February 2007. DGS/RESO cautioned CHP not to be surprised if those budget packages contain cost estimates of \$2,000,000 per site on average, based primarily on prior tower and vault projects conducted by DGS. DGS and CHP continue to review and analyze the information in the draft budget packages to identify areas of potential cost savings. The following are items that have been identified and continue to be discussed and evaluated:

- **Cost of travel to radio vault sites** is a significant factor in the cost of Architectural and Engineer consultants, Construction Inspection Services, Materials Testing, Project Management, and State Fire Marshall (SFM) inspections.
- **Change in delivery methods** is a potential change that could reduce costs and shorten the delivery time.
- **Change in vault types** from concrete block, built on site, to a prefabricated vault.
- **CHP's offer to complete demolition with their staff.**
- **Miscellaneous small items** have been identified with potential cost savings. Items such as CHP providing propane fuel for tank, fewer propane tanks/fewer days of available emergency power, pre-packaged generators and buildings, SFM plan checking, Americans with Disabilities Act plan checking, utilizing slightly smaller vaults and/or towers, relocation of buildings, etc
- **Elimination of entire sites** should be further studied. Given the overall project funding limitations the most productive, large cost savings would come from elimination of entire sites.
- **Errors on Draft Budget Packages** - the current costs and scope outlined on the draft budget packages are still being reviewed. Once all comments/corrections are received a final cost estimate for each project will be completed.

On January 26, 2007, CHP/TS staff attended a training workshop provided by DGS/RESO on how to review the anticipated draft budget packages for consistency between project description and scope of work. Based on the perceived complexity involved in the budget package review, the CHP's RAM consultant, who possesses an extensive background in telecommunications projects, has been tasked with reviewing each of the draft budget packages. Feedback on the budget packages will continue to be provided to DGS.

On January 30, 2007, CHP received the first of the 71 draft remote site budget packages from DGS/RESO, followed by the remaining draft budget packages in early February 2007. As stated previously, DGS/RESO has done an admirable job of compiling a large amount of information from each of the radio vault sites and preparing detailed draft budget packages in a relatively short amount of time. With that said, the total projected costs contained in the draft budget packages for the 71 sites in Central and Valley Division, as presented by DGS/RESO, equals approximately \$271,910,015, which equates to an average of \$3,829,719 per site (see Annex C). This cost projection greatly exceeds the initial projections anticipated by CHP, and it greatly exceeds the remote site development funding currently authorized in CHPERS.

Because of this significant remote site cost estimates, the CHP decided not to submit a Spring Finance Letter this year. The additional time will afford CHP and DGS the ability to fully evaluate the draft budget packages as presented by DGS and allow the Governor, Legislature, and control agencies to provide input before continuing. It is hoped that the consultant contractor conference scheduled for March 2007 will provide additional insight and information on other delivery methods that might positively impact the remote site costs (for more information see Page 17). Additionally, the CHP and DGS will reevaluate the scope of the project to ensure total costs remain at or below the existing project budget, while retaining the greatest number of project deliverables.

While remote site renovation and development alternatives are being explored, the value of these site assessments cannot be overstated. A comprehensive evaluation of each site will provide the state with a clear picture of the communication capabilities and shortcomings of a large portion of the telecommunications infrastructure. Before this project began, CHP and DGS communicated to the Legislature that year one of the CHPERS project would be used to assess, evaluate, and estimate remote site development costs. To that end, much has been accomplished to date. Prior to these site visits, no consolidated inventory of these radio vault sites existed. The extensive information captured during these visits has helped provide a more thorough understanding of the status of each of these sites, including property ownership, property access rights and easements, the condition of existing equipment, current space allocations, power availability, and countless other factors surrounding the state's existing public safety radio system infrastructure. It is critical that these remote site evaluations continue throughout the remaining CHP Divisions, as it will help the state to develop a comprehensive repository of the condition of these vital resources.

The Department will continue to upgrade the portable radios as outlined in CHPERS to improve transmission range and interoperability. The mobile (in-vehicle) radio system portion of the project will also continue as originally scoped. This will provide interoperability at the individual officer level. An in-vehicle, multi-radio configuration will provide communication flexibility for small-scale or localized interoperability needs.

The remote site visits that began this fiscal year will continue in the upcoming fiscal year with a project goal of assessing the condition and capability of each state-owned or leased site that contains CHP radio equipment. To remain within the original project



costs, remote site renovation or development will occur only at those sites with the most critical need.

Other alternatives being explored include the consolidation of radio vault equipment at alternative locations that provide easier access for system control and maintenance. This approach may reduce the work needed at selected radio vault sites to tower improvements and the installation of wired connectivity to the alternative vault location.

The CHP and DGS remain committed to keeping the CHPERS project within its allocated budget, even if it means scaling down the overall size of the project, while maintaining those items essential to improving the safety and integrity of the CHP's public safety radio system.

#### 700 MHz Spectrum Acquisition

The PSRSPC has approved CHP's request for use of the 700 MHz spectrum; however, the number of approved frequency pairs has not been finalized. DGS initially indicated the need for 25 frequency pairs; however, DGS recently advised that only 18 pairs may be necessary. Once final confirmation is received, CHP will request the licensing agreements for the additional frequencies. The 700 MHz frequencies will provide extended range from the portable radio/extender to the vehicular repeater. The extender range will allow officers to leave the patrol vehicle for longer distances without losing vehicular communications with the dispatcher, as well as will provide better in-building communication.

#### Mobile/Portable Radio Acquisition

The CHP, in conjunction with DGS, has developed operational and technical specifications for the mobile VHF low band, VHF high band, UHF, Vehicular Repeater System (VRS), and 700/800 MHz portable radios. All specifications have been defined for the radio systems and were incorporated in the bid solicitation process. The specifications were submitted to DGS Procurement Division for final review and approval.

At the suggestion of DGS, the VRS was combined with the CPVE; therefore, allowing CHP to purchase 250 800 MHz radios. The 800 MHz radios are vital to communicate with first responders during tactical and emergency operations.

Twenty portable 700/800 MHz radios will also be purchased to conduct field compliance testing to ensure all specifications meet the technical and operational requirements as envisioned in the CHPERS project.

The portable radio purchase has been revised to reflect a reduction of the quantity of chargers to correct an error in the original equipment purchase plan. The original equipment purchase plan included the purchase of 2,673 pocket chargers; instead, 1,000 bank chargers will be purchased which will allow five portables to be charged simultaneously. The purchase of the bank chargers is a cost savings of \$1,673,000.

### Consolidated Patrol Vehicle Environment (CPVE)

The CPVE is a cost effective solution to improve the efficiency and effectiveness of the patrol officer's vehicle work environment. The project is a vehicle tactical network to consolidate multiple mobile radios in the trunk of the patrol vehicle whereby all radios and emergency equipment are combined into a single interface in the vehicle's passenger compartment. CPVE uses a mobile platform for radio interoperability with other law enforcement and public safety agencies.

Operational and technical specifications were initially developed by CHP and an internal RFI was conducted for the CPVE portion of the CHPERS project. The specifications were submitted to DGS for review. CHP and DGS jointly worked on the development of final specifications for vendor solicitation; however, DGS advised that a second RFI was necessary due to the complexity of the technologies involved. It was decided that the CPVE and the VRS needed to be combined into a single package. DGS has distributed the RFI to the vendor community and both DGS and CHP are currently reviewing the responses. The CPVE procurement is dependent upon a successful award of the mobile radio systems, which is anticipated May 2007. The requirements for the CPVE procurement will be based on the outcome of the mobile radio system procurements. The development of the requirements will be a joint effort between DGS Procurement, DGS/TD and CHP. Due to the complexity of the CPVE procurement and the various steps associated with a Request for Proposal, DGS anticipates this procurement will be completed on or by February 2008. The projected \$36,579,378 of the first year expenditures takes into consideration that the \$16,387,000 allocated for the CPVE equipment will not be expended this year. CHP will disencumber the funds and submit a BCP for the sixth year in order to complete statewide distribution of CPVE equipment. CPVE purchases in the remaining fiscal years will continue as scheduled.

### Personnel Years (PYs)

As outlined in AB 1801, Budget Act of 2006, the CHP received position authority for 10 additional personnel years to perform the duties necessary for the acquisition and implementation of the CHPERS project. Within the 2006 budget, approval was given to hire two full-time Associated Information Systems Analysts (AISA), three Telecommunications Systems Analyst IIs (TSA IIs), four Electronic Technicians (ET), and one Warehouse Worker. Below are the duties and status of the positions:

- Associated Information Systems Analyst – Both AISA positions were filled; however, due to the recent transfer of an employee, one of the AISA positions is currently in the hiring process.

The AISAs continue to develop mobile and portable radio programming, download tactical network and other Mobile Digital Computer software, conduct network functionality testing, and perform final quality control. Their duties are associated with additional stations on the vehicle equipping line

which are necessary to support and complete the tactical network installations. As the Department transitions to a networked radio system, these stations will be a permanent part of the production process. As the network is upgraded over the years, research and analysis of new technologies related to software and network changes are expected.

- Telecommunications Systems Analyst II – All three TSA IIs were filled; however, due to the recent transfer of an employee, one of the positions is currently in the hiring process.

The TSAs are performing the following duties associated with the enhanced radio system: preparing operational specifications of the mobile and fixed radio system equipment; designing and implementing radio personality plans (radio channel plans and talk groups); assisting with mobile and portable radio programming; updating the mobile radio system user guide books; revising radio policy and procedure manuals; assisting with the CPVE; network issues; radio deployment plans; analyzing and recommending telecommunications solutions, performing equipment acceptance testing, research, evaluation, trouble-shooting, and ongoing training support; and continued support and maintenance of the equipment.

- Electronic Technicians – All four positions have been filled; however, one was reclassified and filled as an ET Supervisor.

The ET duties include assembling the CPVE component trays prior to installation into the enforcement vehicles. The new tactical network will require preassembly and consists of more varied and complex components than the present system. These positions are critical in order to maintain the current vehicle production of five cars per day to meet the current needs of the Department. Without these positions, existing employees would be removed from the equipping line to assemble the component trays. A reduction in the staffing level of the equipping line would require a complete halt in production which would adversely affect the supply of the enforcement fleet and result in a replacement back-log.

- Warehouse Worker - The Warehouse Worker position has been filled.

The Warehouse Worker is tasked with performing the following duties associated with the additional equipment purchase, along with other duties as assigned: load and/or unload delivery trucks, transport materials to specified areas; assist in receiving, unpacking, and comparing incoming materials against bills of lading and the CHP 266, Equipment Credit Memo, to verify items and quantities received; palletize, property tag; move materials to specified locations, re-palletize, maintain inventory records, and assist in the preparation of materials for shipment. During the transition phase of CHPERS, CHP's inventory will be greatly increased until the obsolete

equipment is phased out. The WW will be a vital part of the phase out period as well.

#### Risk Assessment and Mitigation Consultant

At the request of DOF, CHP contracted with a vendor for a RAM consultant to provide project oversight as an independent reviewer and system analyst, and to provide risk management assessment. A contract was established in January 2007, for 24 months with Auriga Corporation. The projected expenditures for the contract in fiscal year 2006/2007 total \$107,316.

The consultant has over 30 years of experience in the design and implementation of telecommunications systems including fiber optic and microwave systems. He has an exceptional understanding of the technology, operations, business economics and regulatory requirements of telecommunications systems in the U.S. and other countries. His understanding is based on decades of experience in working with both public and private sector organizations in the U.S. and other countries.

Prior to joining Auriga, the RAM consultant served as the project manager for a number of high profile Fiber to the Premise and wireless projects throughout the U.S. and internationally. These projects include design and deployment of some of the first IP Video distribution systems in Australia, China and Korea. The scope also involved conducting a feasibility study, preparing design specifications, tender documents, bid evaluation, contract negotiations and project management for implementation of telecommunications systems.

Upon his appointment, the RAM consultant immediately began a comprehensive review of the CHP's project plan for CHPERS, as well as all previously prepared documents regarding its development, implementation, and status. As part of his daily duties, he continues to evaluate the overall health of the project and has been working with staff from CHP and DGS to mitigate any identified risks. He also attends project team meetings and is currently providing a detailed review and assessment of each of the draft remote site budget packages recently prepared by DGS. He is tasked with preparing ongoing quarterly risk reports for submission to Business, Transportation and Housing Agency, and monthly reports for CHP management review.

#### Multi-Radio System Project Manager

The solicitation package for the MRS-PM consultant was to provide oversight of the project plan and assist with the status and reporting of the statewide radio system for CHPERS, CPVE, and RCIP. The MRS-PM consultant responsibilities include maintaining and tracking daily activity and providing weekly, monthly, quarterly, and yearly project reports with up-to-date information from working groups relating to the fixed radio systems infrastructure, frequency acquisition, partnerships, communications centers, real estate development, purchasing, joint tactical communications, and

mobile/portable radios. The reports will monitor project progress versus baseline activity.

The initial contract for the MRS-PM was terminated due to the inability of the consultant to meet the expectations contained in the Statement of Work. A total of \$69,377 was expended on the initial contract. Upon termination of the initial contract, CHP immediately established internal project management oversight in the interim until a new contract could be executed. The internal project manager was selected due to her background and experience, having previously served as a project manager for the county on a number prior of high profile projects. The assignment of an internal CHP MRS-PM is viewed as an interim solution until a permanent project manager can be acquired for the duration of this project. Due to the increasing complexities of this project, and her other critical duties necessary for project completion, the CHP's interim internal MRS-PM is not able to sustain project management responsibilities beyond the initial stages. Therefore, on November 21, 2006, the CHP distributed an e-mail solicitation to 85 potential vendors to refill the MRS-PM position.

In January 2007, CHP made a conditional offer to contract with Sabot Technologies for a period of 24 months to provide project oversight and assistance with the project management, planning, and implementation. Pending the award of the MRS-PM contract, the projected expenditures for the new contract in fiscal year 2006/2007 total \$112,400.

The selected project manager is a certified Project Management Professional and manager with Sabot Technologies. Prior to joining Sabot, she was Director of Professional Services for a local consulting firm and headed their project management solution offering. She is a Project Management Instructor in the California State University, Sacramento College of Continuing Education, and specializes in teaching Procurement Management, Quality Management, and Project Management Basics.

She is a certified by the Project Management Institute with a background in engineering, and has over 14 years of experience managing information technology and engineering projects, and in product development and professional services. She has years of experience in managing large project efforts and implementing projects across diverse geographic, cultural, and organizational boundaries.

The CHP continues to provide Business, Transportation and Housing Agency with quarterly updates on the status of the CHPERS project (see Annex D).

## **ALLIED AGENCY INTEROPERABILITY**

To date, no adverse effects have been identified with regards to new technology currently being implemented by other local and state public safety agencies. CHP will continue to monitor any changes or mandates and, if necessary, include updated information via supplemental report.

The PSRSPC and DGS continue to work with CHP to develop a plan for 700 MHZ spectrum allocation and interoperability gateway deployment and governance. The CHP's frequency usage plan is still in alignment with operable and interoperable communications needs, and will move the Department further along the SAFECOM interoperability continuum. Interoperability gateway equipment will provide interoperability at the dispatcher level, while the Consolidated Patrol Vehicle Environment will provide it at the officer level. Both have a vital role in routine and emergency incident communications.

## **CONSULTANT CONTRACTOR CONFERENCE**

DGS, in conjunction with CHP, is planning a consultant contractor conference to solicit information and feedback from private sector consultants and contractors with experience in telecommunications projects and remote radio site renovation. The conference is scheduled for March 14, 2007. The conference is intended to gain feedback from the vendor community on their experience on large telecommunications projects and possible delivery methods that could improve the cost and the schedule of this project.

## **CONCLUSIONS**

A tremendous amount of work has been accomplished by CHP and DGS during the first nine months of the CHPERS project. Virtually all of the tasks outlined in AB 1801 for the 2006/2007 fiscal year have been successfully completed. The CPVE procurement is dependent upon a successful award of the mobile radio systems, which is anticipated in May 2007. The development of the requirements will be a joint effort between DGS Procurement, DGS/TD and CHP. Due to the complexity of the CPVE procurement and the various steps associated with a Request for Proposal, it is anticipated that this project will be completed on or around February 2008. The projected \$36,579,378 of the first year expenditures takes into consideration that the \$16,387,000 allocated for the CPVE equipment will not be expended this year. CHP will disencumber the funds and submit a BCP for the sixth year in order to complete statewide distribution of CPVE equipment. CPVE purchases in the remaining fiscal years will continue as scheduled.

Information obtained by DGS and CHP from the remote site visits conducted in Central and Valley Division over the past several months has proven to be invaluable. Much has been learned about the true status of the radio vault sites and the state's critical infrastructure. The system is a mix of private and public owned sites, and the detailed information captured from each location has shown that much of the state's infrastructure is in need of some level of attention. Typical infrastructure issues needing improvement include: many radio vaults and towers are too crowded to add equipment; many sites are already crowded with facilities and can not accommodate additional vaults or towers; many vaults do not have adequate cooling to accommodate the equipment heat load; many do not have a reliable power source or emergency power; some do not have current leases or access agreements; and most do not meet essential services requirements and some have site road or access issues.

The estimated high cost of repairs and system improvements, as presented by DGS, may preclude all sites from being addressed as part of CHPERS. However, the state cannot ignore the status of the infrastructure considering it supports multiple public safety and response agencies, as well as the statewide emergency microwave system, and the state's emergency alert system. The state, through the Office of Homeland Security, Governor's Emergency Operations Council, and the PSRSPC, should consider the information being developed relative to the state microwave backbone, and develop a methodology for replacement, repair, and/or enhancement in the near future.

Finally, the CHP remains confident that the CHPERS project can still achieve its stated goal of greatly enhancing the current public safety radio system, while staying within the budget presently allocated. The CHPERS project continues to be a critical endeavor in order to address the CHP's aging radio communications infrastructure and in doing so will help to improve radio operability and interoperability, thereby enhancing public safety and the protection of state assets.

# ANNEX A



**ANNEX A**  
**Fiscal Year 2006/2007      CHPERS EXPENDITURES**

	<b>EQUIPMENT</b>	<b>DGS SERVICES</b>	<b>CONSULTANTS</b>	<b>PERSONNEL (10 PYs)</b>	<b>TOTAL</b>
-	-	-	-	-	-
<b>Allocation</b>	\$50,513,000	\$4,508,000	\$606,000	\$753,000	<b>\$56,380,000</b>
<b>Encumbrances:</b>					
<b>CPVE*</b>	\$0				
<b>Mobiles</b>	\$14,494,317				
<b>Portables</b>	\$16,243,784				
<b>Remote Site Equipment</b>	\$193,950	\$2,150,000			
<b>Total Encumbered**</b>	<b>30,932,051</b>	<b>2,150,000</b>	<b>219,716</b>	<b>753,000</b>	<b>34,054,767</b>
<b>Year to Date Expenditures</b>		639,234	69,377		<b>\$708,611</b>
<b>Projected expenditures***</b>	-	1,816,000	-	-	<b>1,816,000</b>
<b>Balance for 2006/2007</b>	<b>\$19,580,949</b>	<b>-\$97,234</b>	<b>\$316,907</b>	<b>\$0</b>	<b>\$19,800,622</b>

\*The purchase requisition was submitted to DGS totaling \$16,378,000 for equipment associated with the CPVE; however, DGS advised that due to the complexity of the technologies involved, a second RFI would be required. Due to the time involved with the RFI process, DGS indicates that the purchase of CPVE equipment will not be accomplished by the end of fiscal year 2006/2007. Therefore, the monies allocated for the CPVE will be disencumbered for the 2006/2007 fiscal year and CHP will submit a Budget Change Proposal in the sixth fiscal year.

\*\*Until the requisitions have been finalized by DGS, costs included for the purchase of equipment are estimates. Additionally, the projected expenditures for DGS services is based on the current monthly average of \$227,000.

\*\*\*This amounts reflect expenditures anticipated for the remainder of fiscal year 2006/2007.

# ANNEX B

CHPERS Telecommunications Equipment Cost Estimate

Mobile/Portable		2006-07 Mobile/Portable Equipment				2007-08 Mobile/Portable Equipment				2008-09 Mobile/Portable Equipment				2009-10 Mobile Equipment				2010-11 Mobile Equipment				5 Year Total	
	Useful		Unit	Tax	Total			Unit	Total			Unit	Total			Unit	Total			Unit	Total		Total
Item/Description	Life Expectancy	Qty	Cost	Amount	Cost	Qty		Cost	Cost	Qty		Cost	Cost	Qty		Cost	Cost	Qty		Cost	Cost	Qty	Cost
Network, Mobile Tactical - with Touch Screen (entire system) *	10 Yrs	0	\$16,000	\$0	\$0	950		\$11,000	\$10,450,000	950		\$11,000	\$10,450,000	950		\$11,000	\$10,450,000	850		\$11,000	\$9,350,000	3,700	\$40,700,000
Network, Mobile Tactical Hard Drive (replace every four years) *	4 Yrs	0	\$0	\$0	\$0													950		\$600	\$570,000	950	\$570,000
Radio, Mobile, Automatic Vehicular Repeaters (integrated into Mobile Tactical Network)	10 Yrs	0	\$10,000	\$0	\$0	950		\$10,000	\$9,500,000	950		\$10,000	\$9,500,000	950		\$10,000	\$9,500,000	850		\$10,000	\$8,500,000	3,700	\$37,000,000
Radio, Mobile - High-band VHF (P25) Trunked	10 Yrs	950	\$5,000	\$368,125	\$5,118,125	950		\$5,000	\$4,750,000	950		\$5,000	\$4,750,000	950		\$5,000	\$4,750,000	850		\$5,000	\$4,250,000	4,650	\$23,618,125
Radio, Mobile - Low-band VHF	10 Yrs	950	\$3,000	\$220,875	\$3,070,875	950		\$3,000	\$2,850,000	950		\$3,000	\$2,850,000	950		\$3,000	\$2,850,000	850		\$3,000	\$2,550,000	4,650	\$14,170,875
Radio, Mobile - UHF (P25) Trunked	10 Yrs	950	\$5,000	\$368,125	\$5,118,125	950		\$5,000	\$4,750,000	950		\$5,000	\$4,750,000	950		\$5,000	\$4,750,000	850		\$5,000	\$4,250,000	4,650	\$23,618,125
Radio, Mobile - 700/800 MHz (P25) Trunked	10 Yrs	250	\$4,407	\$85,390	\$1,187,192	0		\$5,000	\$0	0		\$5,000	\$0	0		\$5,000	\$0	0		\$5,000	\$0	250	\$1,187,192
Sub-total - Mobiles		3,100			\$14,494,317	4,750			\$32,300,000	4,750			\$32,300,000	4,750			\$32,300,000	5,200			\$29,470,000	22,550	\$140,864,317
Radios, Portable (P25) Trunked - Various Bands	10 Yrs	2,673	\$5,000	\$1,035,788	\$14,400,788	2,673		\$5,000	\$13,365,000	2,673		\$5,000	\$13,365,000									8,019	\$41,130,788
Radios, Portable (700/800 MHz)	10 Yrs	10	\$3,644	\$2,824	\$39,262	0		\$0	\$0	0		\$0	\$0									10	\$39,262
Radios, Portable (700/800 MHz)	10 Yrs	10	\$5,066	\$3,926	\$54,582	0		\$0	\$0	0		\$0	\$0									10	\$54,582
Radio Accessories (Adapter/Wirekit)	10 Yrs	2,673	\$133	\$27,593	\$383,637	2,673		\$150	\$400,950	2,673		\$150	\$400,950									8,019	\$1,185,537
Radio Chargers (Five-pocket)	10 Yrs	1,000	\$1,000	\$77,500	\$1,077,500	0		\$1,000	\$0	0		\$1,000	\$0									1,000	\$1,077,500
Radio, Speaker Microphones	10 Yrs	2,673	\$100	\$20,716	\$288,016	2,673		\$100	\$267,300	2,673		\$100	\$267,300									8,019	\$822,616
Sub-total - Portables		9,039			\$16,243,784	8,019			\$14,033,250	8,019			\$14,033,250									25,077	\$44,310,284
Infrastructure - Fixed Radio System						2007-08 Valley and Central Divisions				2008-09 Northern & Coastal Divisions				2009-10 Inland & Border Divisions				2010-11 Southern & Golden Gate Divisions				5 Year Total	
	Useful							Unit	Total			Unit	Total			Unit	Total			Unit	Total		Total
Item/Description	Life Expectancy					Qty Valley	Qty Central	Cost	Cost	Qty Northern	Qty Coastal	Cost	Cost	Qty Inland	Qty Border	Cost	Cost	Qty Southern	Qty GG	Cost	Cost	Qty	Cost
Simulcast Control & Alignment Equipment (TAIT)	10 Yrs					4	3	\$800,000	\$5,600,000	5	3	\$800,000	\$6,400,000	3	4	\$800,000	\$5,600,000	1	1	\$800,000	\$1,600,000	24	\$19,200,000
Radio, Base Station, GPS High Stability Oscillators	10 Yrs					190	120	\$3,300	\$1,023,000	215	175	\$3,300	\$1,287,000	168	258	\$3,300	\$1,405,800	248	265	\$3,300	\$1,692,900	1,639	\$5,408,700
Radio, Base Station, Fixed (Simulcast)	10 Yrs					190	120	\$20,000	\$6,200,000	215	175	\$20,000	\$7,800,000	168	258	\$20,000	\$8,520,000	248	265	\$20,000	\$10,260,000	1,639	\$32,780,000
Radio, Receivers, Fixed	10 Yrs					950	600	\$7,000	\$10,850,000	1,075	875	\$7,000	\$13,650,000	840	1,290	\$7,000	\$14,910,000	1,240	1,325	\$7,000	\$17,955,000	8,195	\$57,365,000
Radio, Receiver Vote Cards	10 Yrs					1,140	720	\$2,400	\$4,464,000	1,290	1,050	\$2,400	\$5,616,000	1,008	1,548	\$2,400	\$6,134,400	1,488	1,590	\$2,400	\$7,387,200	9,834	\$23,601,600
Rate, Base Stations/Receiver Installations	NA					19,000	12,000	\$153	\$4,743,000	21,500	17,500	\$161	\$6,265,350	16,800	25,800	\$169	\$7,185,875	24,800	26,500	\$177	\$9,086,083	163,900	\$27,280,307
Radio, Misc Components/Antennae	10 Yrs					1,140	720	\$1,000	\$1,860,000	1,290	1,050	\$1,000	\$2,340,000	1,008	1,548	\$1,000	\$2,556,000	1,488	1,590	\$1,000	\$3,078,000	9,834	\$9,834,000
Radio, Vault & Tower Construction, Modification, or Expansion & Services (Permits)	15 Yrs					20	9	\$300,000	\$8,700,000	23	19	\$300,000	\$12,600,000	19	22	\$300,000	\$12,300,000	9	17	\$300,000	\$7,800,000	138	\$41,400,000
Sub-total - Remote Site Equipment/Vaults/ Towers						3,634	2,292		\$43,440,000	4,113	3,347		\$55,958,350	3,214	4,928		\$58,612,075	4,722	5,053		\$58,859,183	31,303	\$216,869,607
Department of General Services (DGS) - Engineering & System Design					\$4,605,234				\$0				\$0				\$0					\$0	\$4,605,234
Microwave - Major Upgrade & Expansion (DGS)						8	5	\$500,000	\$6,500,000	15	11	\$500,000	\$13,000,000	15	9	\$500,000	\$12,000,000	1	6	\$500,000	\$3,500,000	70	\$35,000,000
Personnel (2-Consultants, 10 Civil Service Positions)					\$1,042,093				\$1,042,093				\$1,042,093				\$1,042,093				\$1,042,093		\$5,210,465
Misc Project Support Equipment-Temporary Radio Vaults (one-time expense)		4	\$45,000	\$13,950	\$193,950																	4	\$193,950
Sub-total - Services & Miscellaneous		4			\$5,841,277	8	5		\$7,542,093	15	11		\$14,042,093	15	9		\$13,042,093	1	6		\$4,542,093	74	\$45,009,649
Grand Totals		12,143			\$36,579,378	16,411	2,297		\$97,315,343	16,897	3,358		\$116,333,693	7,979	4,937		\$103,954,168	9,923	5,059		\$92,871,276	79,004	\$447,053,858

Telecommunications Equipment - Enhanced Radio System Cost Estimate

Mobile/Portable		2011-12 Mobile/Portable Equipment				2012-13 Mobile/Portable Equipment				2013-14 Mobile/Portable Equipment				2014-15 Mobile Equipment				2015-16 Mobile Equipment				5 Year Total	
	Useful			Unit	Total			Unit	Total			Unit	Total			Unit	Total			Unit	Total		Total
Item/Description	Life Expectancy	Qty		Cost	Cost	Qty		Cost	Cost	Qty		Cost	Cost	Qty		Cost	Cost	Qty		Cost	Cost	Qty	Cost
Network, Mobile Tactical - with Touch Screen (entire system)	10 Yrs			\$11,000	\$0			\$11,000	\$0			\$11,000	\$0			\$11,000	\$0			\$11,000	\$0	0	\$0
Network, Mobile Tactical Hard Drive (replace every four years)	4 Yrs	950		\$600	\$570,000	950		\$600	\$570,000	950		\$600	\$570,000	950		\$600	\$570,000	950		\$600	\$570,000	4,750	\$2,850,000
Spare Parts and/or items not included in system (example siren amplifier)		950		\$1,800	\$1,710,000	950		\$1,800	\$1,710,000	950		\$1,800	\$1,710,000	950		\$1,800	\$1,710,000	950		\$1,800	\$1,710,000	4,750	\$8,550,000
Radio, Mobile, Automatic Vehicular Repeaters	10 Yrs			\$10,000	\$0			\$10,000	\$0			\$10,000	\$0			\$10,000	\$0			\$10,000	\$0	0	\$0
Radio, Mobile - High-band VHF (P25) Trunked	10 Yrs			\$5,000	\$0			\$5,000	\$0			\$5,000	\$0			\$5,000	\$0			\$5,000	\$0	0	\$0
Radio, Mobile - Low-band VHF	10 Yrs			\$3,000	\$0			\$3,000	\$0			\$3,000	\$0			\$3,000	\$0			\$3,000	\$0	0	\$0
Radio, Mobile - UHF (P25) Trunked	10 Yrs			\$5,000	\$0			\$5,000	\$0			\$5,000	\$0			\$5,000	\$0			\$5,000	\$0	0	\$0
Radio, Mobile - 700/800 MHz (P25) Trunked	10 Yrs	800		\$5,000	\$4,000,000			\$5,000	\$0			\$5,000	\$0			\$5,000	\$0			\$5,000	\$0	800	\$4,000,000
Sub-total - Mobiles		2,700			\$6,280,000	1,900			\$2,280,000	1,900			\$2,280,000	1,900			\$2,280,000	1,900			\$2,280,000	10,300	\$15,400,000
Radios, Portable (P25) Trunked - Various Bands (UHF-2011-12)	10 Yrs	800		\$5,000	\$4,000,000			\$5,000	\$0			\$5,000	\$0									800	\$4,000,000
Radio Accessories (Adapter/Wirekit)	10 Yrs	800		\$150	\$120,000			\$150	\$0			\$150	\$0									800	\$120,000
Radio Chargers (Five-pocket)	10 Yrs	1,000		\$1,000	\$1,000,000			\$1,000	\$0			\$1,000	\$0									1,000	\$1,000,000
Radio, Speaker Microphones	10 Yrs	800		\$100	\$80,000			\$100	\$0			\$100	\$0									800	\$80,000
Sub-total - Portables		3,400			\$5,200,000				\$0				\$0									3,400	\$5,200,000
Infrastructure - Fixed Radio System		2011-12 Southern & Golden Gate Divisions																				5 Year Total	
	Useful							Unit	Total			Unit	Total			Unit	Total			Unit	Total		Total
Item/Description	Life Expectancy	Qty Southern	Qty GG	Cost	Cost			Cost	Cost			Cost	Cost			Cost	Cost			Cost	Cost	Qty	Cost
Simulcast Control & Alignment Equipment (TAIT)	10 Yrs			\$800,000	\$0			\$800,000	\$0			\$800,000	\$0			\$800,000	\$0			\$800,000	\$0	0	\$0
Radio, Base Station, GPS High Stability Oscillators	10 Yrs			\$3,300	\$0			\$3,300	\$0			\$3,300	\$0			\$3,300	\$0			\$3,300	\$0	0	\$0
Radio, Base Station, Fixed (Simulcast)	10 Yrs			\$20,000	\$0			\$20,000	\$0			\$20,000	\$0			\$20,000	\$0			\$20,000	\$0	0	\$0
Radio, Receivers, Fixed	10 Yrs			\$7,000	\$0			\$7,000	\$0			\$7,000	\$0			\$7,000	\$0			\$7,000	\$0	0	\$0
Radio, Receiver Vote Cards	10 Yrs			\$2,400	\$0			\$2,400	\$0			\$2,400	\$0			\$2,400	\$0			\$2,400	\$0	0	\$0
Rate, Base Stations/Receiver Installations (from prior year purchases)	NA	24,800	26,500	\$186	\$9,541,800				\$0				\$0				\$0				\$0	24,800	\$9,541,800
Radio, Misc Components/Antennae	10 Yrs			\$1,000	\$0			\$1,000	\$0			\$1,000	\$0			\$1,000	\$0			\$1,000	\$0	0	\$0
Radio, Vault & Tower Construction, Modification, or Expansion & Services (Permits)	15 Yrs	?	?	?				\$300,000	\$0			\$300,000	\$0			\$300,000	\$0			\$300,000	\$0	#VALUE!	\$0
Sub-total - Remote Site Equipment/Vaults/ Towers		#VALUE!	#VALUE!		\$9,541,800				\$0				\$0				\$0				\$0	#VALUE!	\$9,541,800
Department of General Services (DGS) - Engineering & System Design		39,200		\$186	\$7,291,200				\$0				\$0				\$0				\$0	39,200	\$7,291,200
Microwave - Major Upgrade & Expansion (DGS)		7		\$500,000	\$3,500,000			\$500,000	\$0			\$500,000	\$0			\$500,000	\$0			\$500,000	\$0	7	\$3,500,000
Personnel (2-Consultants, 10 Civil Service Positions)									\$0				\$0				\$0						\$0
Misc Project Support Equipment-Temporary Radio Vaults (one-time expense)																							\$0
Sub-total - Services & Miscellaneous					\$10,791,200				\$0				\$0				\$0				\$0		\$10,791,200
Grand Totals		#VALUE!			\$31,813,000	1,900			\$2,280,000	1,900			\$2,280,000	1,900			\$2,280,000	1,900			\$2,280,000	#VALUE!	\$40,933,000
Baseline-Internal trim from \$4,762,860 to \$4,477,088 (04/05) Remaining Baseline Amount - Apply to CHPERS BCP																							\$0
Requested as Special Funding					\$31,813,000				\$2,280,000				\$2,280,000				\$2,280,000				\$2,280,000		\$40,933,000

# ANNEX C

Site Name	Group	County	Proposed Cost	Labor/Equip	Total Site Cost	Vault Size	Tower Height	Completion Date	Comments/Issues
Group 1 - Valley Sites									
Alpha BSL	2	El Dorado	\$3,438,000	\$714,480	\$4,152,480	Small	120'	10/2011	
Auburn AO		Placer	\$2,174,000	\$505,336	\$2,679,336	Medium	120'	1/2011	Newly proposed site
Bald Mtn. (Butte)	11	Butte	\$3,438,000	\$618,496	\$4,056,496	Medium	80'	10/2011	
Bald Mtn.	20	Butte	\$1,918,000	\$982,350	\$2,900,350	Repair	120'	10/2011	
Beckwourth	4	Plumas	\$2,865,000	\$1,346,504	\$4,211,504	Large	100'	6/2011	
Ben Bolt	2	El Dorado	\$2,060,600	\$1,079,914	\$3,140,514	Medium	100'	10/2011	
Big Hill Lookout	2	El Dorado	\$865,300	\$961,576	\$1,826,876	Repair	Existing	6/2011	
Blue Canyon Airport	1	Placer	\$2,661,000	\$671,356	\$3,332,356	Large	80'	10/2011	
Blue Mtn.	10	Calaveras	\$3,511,000	\$843,102	\$4,354,102	Medium	80'	10/2011	
Boreal Ridge	1	Nevada	\$4,185,000	\$1,751,453	\$5,936,453	Large	100'	10/2011	
Brockway Summit	4	Placer	\$3,144,000	\$736,963	\$3,880,963	Large	100'	10/2011	
Carson Pass/Caples	2	Alpine	\$1,982,000	\$728,017	\$2,710,017	Large	80'	6/2011	
Chico Area Office	11	Butte	\$1,239,000	\$829,112	\$2,068,112	Repair	100'	1/2011	
Chico Sheriff	11	Butte	\$1,983,000	\$844,313	\$2,827,313	Small	120'	1/2011	
Cisco Butte, new	1	Placer	\$2,363,000	\$1,003,963	\$3,366,963	Small	80'	10/2011	
SUBTOTAL			\$37,826,900	\$13,616,935					
TOTAL COST - GROUP 1			\$51,443,835						
Group 2 - Valley Sites									
Colby Mtn		Tehama	\$3,396,000	\$828,492	\$4,224,492	Medium	120'	1/2011	Newly proposed site
Collierville		San Joaquin	\$2,528,000	\$665,936	\$3,193,936	Large	140'	10/2011	Newly proposed site
Double Dome new	10	Tuolumne	\$3,808,000	\$971,698	\$4,779,698	Medium	100'	10/2011	
Fowler Peak	10	Calaveras	\$2,950,000	\$982,154	\$3,932,154	Large	100'	10/2011	CDF LO tower-CHP doesnt occupy-buildout
Gold Run Area Office *	1	Placer	\$2,223,000	\$524,168	\$2,747,168	Medium	100'	10/2011	Requires New Tower
Hilda Peak	9	Sierra	\$3,596,000	\$781,746	\$4,377,746	Medium	120'	10/2011	
Ione MS	20	Amador	\$2,193,000	\$613,045	\$2,806,045	Medium	120'	1/2011	
Jarbo Gap	11	Butte	\$2,381,000	\$459,055	\$2,840,055	Medium	80'	1/2011	
Leviathan Peak	2	Alpine	\$5,850,000	\$940,287	\$6,790,287	Large	100'	10/2011	
Liberty Hill CHP (New)	10	Tuolumne	\$3,579,000	\$880,685	\$4,459,685	Medium	80'	10/2011	

Needham Grade		Glenn	\$3,130,000	\$844,266	\$3,974,266	Medium	100'	10/2011	Newly proposed site
Oso, Mt	19	Stanislaus	\$2,305,000	\$1,008,082	\$3,313,082	Medium	80'	10/2011	
Peavine	4	Washoe, NV	\$2,931,000	\$690,252	\$3,621,252	Large	120'	10/2011	
Peddler Hill	2	El Dorado	\$2,261,000	\$606,546	\$2,867,546	Large	100'	1/2011	
Pilot Peak LO	7	El Dorado	\$2,231,000	\$666,771	\$2,897,771	Medium	80'	1/2011	
SUBTOTAL			\$45,362,000	\$11,463,183					
TOTAL COST - GROUP 2			\$56,825,183						
Group 3 - Valley Sites									
Pluto, Mt.	4	Placer	\$3,187,000	\$687,007	\$3,874,007	Large	120'	1/2011	
Rancho Seco		Sacramento	\$2,739,000	\$846,162	\$3,585,162	Medium	140'	10/2011	Newly proposed site
Red Mtn	6	Glenn	\$3,580,000	\$790,438	\$4,370,438	Large	100'	10/2011	
Rio Vista		Solano	\$2,827,000	\$552,437	\$3,379,437	Large	160'	1/2011	Newly proposed site
Ruby Bluff	9	Sierra	\$2,871,000	\$856,777	\$3,727,777	Medium	100'	1/2011	
S. Sutter Butte		Sutter	\$2,346,000	\$430,564	\$2,776,564	Medium	120'	10/2011	Newly proposed site
Scout Peak	7	El Dorado	\$2,713,000	\$1,645,348	\$4,358,348	Large	100'	10/2011	
Sierra Vista	10	Calaveras	\$2,165,000	\$672,933	\$2,837,933	Small	80'	10/2011	
Ski Tow Hill	4	Nevada	\$2,699,000	\$635,012	\$3,334,012	Medium	80'	1/2011	
St. Johns Mtn	6	Glenn	\$13,393,000	\$1,901,680	\$15,294,680	Large	100'	1/2011	
Stockton Area Office	20	San Joaquin	\$1,664,000	\$652,078	\$2,316,078	Small	80'	1/2011	
Sunset Hills	9	Butte	\$2,389,000	\$467,583	\$2,856,583	Medium	80'	10/2011	
Topaz Mtn.	2	Douglas, NV	\$3,094,000	\$965,545	\$4,059,545	Large	80'	10/2011	Completed with Group 2
Truckee Area Office *	1	Nevada	\$1,991,000	\$532,860	\$2,523,860	Small	80'	1/2011	
Union Hill South (New)	2	El Dorado	\$2,667,000	\$894,900	\$3,561,900	Medium	160'	10/2011	
Walker Ridge			\$5,801,200	\$790,438	\$6,591,638	Medium	80'	10/2011	Newly proposed site
Wilbur Springs FFS	16	Colusa	\$3,610,000	\$803,323	\$4,413,323	Medium	120'	10/2011	
SUBTOTAL			\$59,736,200	\$14,125,085					
TOTAL COST - GROUP 3			\$73,861,285						

Group 4 - Central Sites									
Atwater AO			\$2,040,000	\$531,240	\$2,571,240	Medium	100'	1/2011	Newly proposed site
Auberry	12	Fresno	\$2,903,000	\$804,364	\$3,707,364	Medium	80'	10/2011	
Bakersfield Area Office *	21	Kern	\$2,112,000	\$1,919,545	\$4,031,545	Medium	120'	1/2011	
Bald (LA)	13	Los Angeles	\$2,550,000	\$508,798	\$3,058,798	Medium	80'	10/2011	
Bear Mtn. (CDF)	8	Fresno	\$2,643,000	\$619,767	\$3,262,767	Medium	120'	10/2011	
Bear Peak	8	Kern	\$3,984,000	\$854,491	\$4,838,491	Medium	100'	10/2011	
Black Mtn. (SLO) **	15	SLO	\$2,474,000	\$727,256	\$3,201,256	Medium	100'	10/2011	
Blue Mtn.		Kern	\$3,758,000	\$743,418	\$4,501,418	Small	80'	10/2011	Newly proposed site
Blue Ridge **	14	Tulare	\$3,874,000	\$1,348,587	\$5,222,587	Medium	120'	1/2011	
Breckenridge	5	Kern	\$2,981,000	\$1,325,785	\$4,306,785	Medium	100'	10/2011	
Bullion, Mtn. **	17	Mariposa	\$3,073,000	\$32,205	\$3,105,205	Large	140'	1/2011	
Deadwood Peak **	12	Madera	\$2,849,000	\$1,005,165	\$3,854,165	Large	120'	10/2011	
Elk Hill	21	Kern	\$2,628,000	\$728,731	\$3,356,731	Medium	100'	10/2011	
Grapevine Peak	13	Kern	\$2,536,000	\$1,177,063	\$3,713,063	Medium	80'	10/2011	
Fresno AO *	8	Fresno	\$2,108,000	\$673,558	\$2,781,558	Medium	120'	1/2011	
Joaquin Ridge **	19	Fresno	\$3,008,000	\$1,205,030	\$4,213,030	Large	140'	10/2011	
Oak Flat	5	Kern	\$3,655,000	\$867,226	\$4,522,226	Medium	100'	1/2011	
Panoche, Mountain	19	Fresno	\$2,517,000	\$679,327	\$3,196,327	Medium	80'	10/2011	
Pelato	13	Kern	\$2,879,000	\$578,116	\$3,457,116	Medium	100'	10/2011	
Penon Blanco	17	Mariposa	\$2,716,000	\$836,619	\$3,552,619	Medium	80'	1/2011	
Plowshare	15	Santa Barbara	\$2,571,000	\$1,021,561	\$3,592,561	Medium	100'	1/2011	
Porterville AO *		Tulare	\$2,145,000	\$653,593	\$2,798,593	Medium	100'	1/2011	Newly proposed site
Shirley Peak	5	Kern	\$3,118,000	\$882,818	\$4,000,818	Small	100'	10/2011	
Telegraph Hill **	17	Tuolumne	\$2,725,000	\$2,208,449	\$4,933,449	Large	120'	10/2011	Site previously deleted from list
<b>SUBTOTAL</b>			<b>\$67,847,000</b>	<b>\$21,932,712</b>					
<b>TOTAL COST - GROUP 4</b>			<b>\$89,779,712</b>						



TOTAL COST - VALLEY & CENTRAL DIVISIONS			\$271,910,015		AVERAGE SITE COST	\$3,829,719
--	--	--	---------------	--	-------------------	-------------

- \* Indicates a CHP Area Office that is already addressed in a separate Capital Outlay Project
- \*\* Indicates a radio site that may already be addressed by a current CDF construction project.

# ANNEX D



## ISSUE MEMORANDUM

**TO:** BARRY SEDLIK, Acting Secretary

**FROM:** M. L. BROWN, Commissioner  
California Highway Patrol  
Phone: (916) 657-7152 Fax: (916) 657-7324  
Email: mlbrown@chp.ca.gov

**PREPARED BY:** K. P. GREEN, Assistant Commissioner, Staff  
California Highway Patrol  
Phone: (916) 657-7194 Fax: (916) 657-7324  
Email: kgreen@chp.ca.gov

**DATE:** February 2, 2007

**SUBJECT:** QUARTERLY CALIFORNIA HIGHWAY PATROL ENHANCED  
RADIO SYSTEM (CHPERS) STATUS REPORT

**Check all applicable boxes:**

- |  |  |
|--|--|
| <input type="checkbox"/> Request for Approval                              | <input type="checkbox"/> Non-Competitively Bid Contract Justification    |
| <input type="checkbox"/> Request for Secretary's Signature                 | <input type="checkbox"/> Other Procurement-Related Document <sup>1</sup> |
| <input checked="" type="checkbox"/> Submittal for Secretary's Information  | <input type="checkbox"/> Feasibility Study Report/Special Project Report |
| <input type="checkbox"/> Request for Discussion                            | <input type="checkbox"/> Rulemaking/Regulation Document                  |
| <input checked="" type="checkbox"/> Response to Secretary's/Agency Request | <input type="checkbox"/> Audit/Investigation-Related Document            |

**AGENCY REFERENCE NUMBER:** 2007Im0040

**TIME FACTOR:** N/A.

**SUMMARY:** The California Highway Patrol Enhanced Radio System (CHPERS) project will provide for the development and implementation of a statewide radio

communications system which will support the California Highway Patrol's (CHP) primary mission and provide an improved state-of-the-art radio system vital for officer safety and the public safety needs of the citizens of California.

This quarterly report will address the current status of the CHPERS project for the quarter ending December 2006. During this quarter, weekly meetings have continued with the Department of General Services Telecommunications Division (DGS/TD), Real Estate Services Department (RESA) and the CHP to discuss statewide remote site evaluations and potential frequency acquisitions for the CHP. Radio vault site survey teams have completed the site evaluations for Valley and Central Divisions in the month of December, 2006.

Interviews were held and a vendor selected for the Risk Assessment and Mitigation (RAM) consultant to provide assistance with the development and implementation of a statewide radio system for CHPERS, Consolidated Patrol Vehicle Environment (CPVE), and the Radio Communications Interoperability Project (RCIP). The RAM consultant began work on January 16, 2007.

A new solicitation package was submitted to multiple vendors for a replacement Multi Radio Systems Project Manager (MRS-PM) consultant to provide monitoring of project activity and oversight of the project plan. Interviews are scheduled and anticipated start date is February 1, 2007.

The RCIP is on track with the installation of interoperability (gateway) equipment in all of the CHP communications centers. This equipment will provide interoperability across first responder disciplines and all levels of government during emergency responses and tactical operations. Templates of Memorandums of Understanding for operation with local allied agencies have been completed and will be utilized by the communications centers to establish mutual aid agreements.

Operational and technical specifications have been developed for the mobile and portable radio purchases and submitted to DGS Procurement Division for final review and approval.

### **CHPERS Project Scheduled Meetings**

The CHP staff completed the CHPERS Project Plan; the plan includes milestone deliverables, tasks associated with the assessment and build-out of the remote sites, operational and specification requirements, procurement process, meetings at staff, executive, and associate levels, reporting activities, and testing and implementation. The day-to-day oversight of the project is the responsibility of the project team comprised of the various disciplines from CHP and DGS/TD.

Business, Transportation, and Housing Agency, CHP, DGS, and the Governor's staff began holding bi-weekly meetings in December 2006 to assess and evaluate the status of the CHPERS project. These meetings will continue to be held every

other Friday to allow the various disciplines to share information, discuss and resolve issues, including updating executive staff on the project progress.

The new CHP Project Manager consultant will maintain and track daily activity and provide a weekly, monthly, quarterly, and yearly project report. The report will monitor project progress versus baseline activity. When a project risk is identified by the RAM consultant, and mitigation measures are recommended, the project team will be responsible to evaluate, mitigate any risks, and if unresolved escalate to the next level.

The CHP is still pursuing the allocation of 26 pairs of 700MHz spectrum (television channels 60-69) for the vehicular repeater system (VRS). DGS/TD built three portable 700MHz-to-UHF units for the CHP for field testing. The 700MHz frequencies will provide extended range from the portable to the vehicular repeater. The extender range will allow the officer to leave his vehicle for longer distances without losing vehicular communications to the dispatcher and will provide better in-building penetration. Field testing has been rescheduled for the first quarter of 2007. The results will be used to ensure the equipment is in compliance with the performance and technical specifications required for the VRS and the portable radio system.

### **Risk Assessment and Mitigation Consultant**

Interviews were held for a RAM consultant to provide assistance with the development and implementation of the statewide radio system for CHPERS, CPVE, and RCIP. Three vendors were identified and scheduled for interviews. The RAM consultant vendor selected was Auriga Corporation. The consultants, Mr. Donald MariHart and Mr. John Krivacie will evaluate and ensure the project meets implementation goals including, but not limited to, accuracy in the estimation, design, construction, execution, and management of the plan. On January 16, 2007, the contract became effective and services commenced. The duration of the contract is anticipated to be approximately 24 months.

### **Multiple Radio Systems Project Manager Consultant**

On November 1, 2006, the contract for the MRS-PM was terminated due to the inability of the consultant to meet the expectations contained in the Statement of Work due to the scale and complexity of the project. The solicitation package for the MRS-PM consultant was completed to provide oversight of the project plan and assist with the status and reporting of the statewide radio system for CHPERS, CPVE, and RCIP. The MRS-PM consultant will maintain and track daily activity and provide weekly, monthly, quarterly, and yearly project reports; in addition to up-to-date information from subject matter working groups relating to the fixed radio systems infrastructure, frequency acquisition, partnerships, communications centers, real estate development, purchasing, joint tactical communications, and mobile radios. The reports will monitor project progress versus baseline activity.

The solicitation package was submitted to 82 vendors on November 21, 2006. The final filing date was December 4, 2006. Sixteen responses were received and reviewed; interviews and candidate selection were concluded the week of December 18, 2006. The contract is to take effect on February 1, 2007, and it is expected that services will commence on the same date. The duration of the contract is anticipated to be approximately 24 months.

### **Teams for Remote Site Evaluations and Development**

Site survey teams comprised of RESD Rights Representation, RESD Construction Management, RESD Environmental Planner, RESD Civil and Structural Engineer, CHP Telecommunications Section, and DGS/TD Engineering visited radio sites for the evaluation and assessment of work required to develop existing and/or identify new radio sites for implementation into the CHPERS Project.

On December 6, 2006, the last site survey for the Central and Valley Divisions was completed. Site survey teams began evaluations of seven sites for Valley and Central Divisions on September 11, 2006. An additional nine sites were visited on September 26, 2006. The remainder of the schedule included 46 sites for the month of October, 28 sites for the month of November, and eight sites for the month of December for a total of 98 sites visited.

RESD has developed an intranet web site available to CHP, DGS, and consultant services associated with the CHPERS project. The web site will include pertinent data gathered from the radio site evaluation team members and will include photos of the facilities, surrounding areas, and road access. The web site was introduced on a limited basis in the month of October. RESD will continue to update the web site on a weekly basis and anticipates all Central and Valley Division site survey information to be on the web site by mid-January.

A Form 22, Public Works Project Authorization and Transfer Request, was processed for the transfer of \$2.1 million from the CHP to RESD for radio site evaluation and assessment.

### **Consolidated Patrol Vehicle Environment**

The CPVE is a cost effective solution to improve the efficiency and effectiveness of the patrol officer's vehicle work environment. The project is a vehicle tactical network to consolidate multiple mobile radios in the trunk of the patrol vehicle whereby all radios and emergency equipment are combined into a single interface (touch screen control head) in the vehicle's passenger compartment. CPVE uses a mobile platform for radio interoperability with other law enforcement and public safety agencies.

The CHP, in conjunction with DGS, has developed operational and technical specifications for the CPVE portion of the CHPERS project. The specifications have

been submitted to DGS Procurement Division for review and the bid solicitation process.

### **Radio Communications Interoperability Project**

Interoperability provides a common platform and operating system that enables a seamless communications network. This common methodology can be applied with the use of current technologies, shared networks, and swapping of radios. The most common methodology is the use of gateway switches, commonly known as black boxes that can be installed at pre-determined locations. The CHP purchased black box gateway switches and deployed them in all CHP communications centers. This equipment will provide interoperability across first responder disciplines and all levels of government during emergency responses and tactical operations.

The RCIP is on track, based on the 2007 Strategic Plan, with the installation of the interoperability gateway systems in all of the CHP communications centers. Eighteen gateway systems have been installed and six more are currently scheduled for installation and completion in the next quarter. Memorandums of Understanding agreements have been developed and are now posted on the CHP intranet website ([www.chp.ca.gov/radio/projdoc.html](http://www.chp.ca.gov/radio/projdoc.html)). The CHP communications centers are establishing joint agreements with local public safety agencies. These efforts will facilitate rapid and efficient interaction among all public safety organizations and provide immediate and coordinated assistance.

### **Development of Radio Operational and Technical Specifications**

The CHP, in conjunction with DGS, has developed operational and technical specifications for the mobile VHF low band, VHF high band, UHF, VRS, and 700/800 MHz portable radios purchases. These radios will support the FY 2006/2007 portion of the CHPERS BCP. All specifications have been defined for the above mentioned radio systems and will be incorporated into the bid solicitation process. The specifications have been submitted to DGS Procurement Division for final review and approval.

DGS is confident the purchases of the portable and mobile radio equipment can be accomplished within the FY 2006/2007. However, DGS has expressed concerns the CPVE and Automatic Vehicular Repeater purchase may not be completed before the end of this FY.

CHP Telecommunications Section will continue to perform field compliance testing to ensure all specifications meet the operational requirements as envisioned in the CHPERS project.

---

---

**SUBJECT:** QUARTERLY CALIFORNIA HIGHWAY PATROL ENHANCED RADIO  
SYSTEM (CHPERS) STATUS REPORT

---

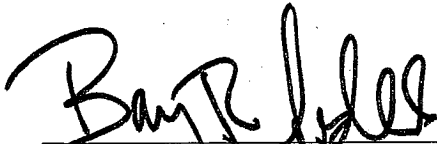
---

**APPROVED:**



M. L. BROWN  
Commissioner  
California Highway Patrol

\_\_\_\_\_  
Date



BARRY SEDLIK  
Acting Secretary  
Business, Transportation and  
Housing Agency

2-15-07  
\_\_\_\_\_  
Date





## ISSUE MEMORANDUM

TO: SUNNE WRIGHT McPEAK, Secretary

FROM: M. L. BROWN, Commissioner  
California Highway Patrol  
Phone: (916) 657-7152 Fax: (916) 657-7324  
Email: mlbrown@chp.ca.gov

PREPARED BY: K. P. GREEN, Assistant Commissioner, Staff  
California Highway Patrol  
Phone: (916) 657-7194 Fax: (916) 657-7324  
Email: kgreen@chp.ca.gov

DATE: August 22, 2006

SUBJECT: CALIFORNIA HIGHWAY PATROL ENHANCED RADIO SYSTEM  
(CHPERS) STATUS REPORT

**Check all applicable boxes:**

- |  |  |
|--|--|
| <input type="checkbox"/> Request for Approval                              | <input type="checkbox"/> Non-Competitively Bid Contract Justification    |
| <input type="checkbox"/> Request for Secretary's Signature                 | <input type="checkbox"/> Other Procurement-Related Document <sup>1</sup> |
| <input checked="" type="checkbox"/> Submittal for Secretary's Information  | <input type="checkbox"/> Feasibility Study Report/Special Project Report |
| <input type="checkbox"/> Request for Discussion                            | <input type="checkbox"/> Rulemaking/Regulation Document                  |
| <input checked="" type="checkbox"/> Response to Secretary's/Agency Request | <input type="checkbox"/> Audit/Investigation-Related Document            |

AGENCY REFERENCE NUMBER: 2006Im0318

TIME FACTOR: N/A.

<sup>1</sup>Either: (1) Notice of Contract to Award  
(2) CMAS contract, MSA contract or Purchase Order exceeding departmental delegated authority.

**SUMMARY:** This report will address the current status of the California Highway Patrol Enhanced Radio System (CHPERS) project for the month of July 2006. During this reporting period, the California Highway Patrol (CHP) has hosted several meetings with the Department of General Services Telecommunications (DGS/TD) and Real Estate Services (RES) Divisions to discuss the formulation of various working groups, remote radio site development and modifications, and the radio system design plan. This report also discusses the status of the Consolidated Patrol Vehicle Environment (CPVE) project as it relates to CHPERS. The CHP has hired a project manager consultant to oversee the CHPERS project and the CHP is continuing to work on each of the tasks outlined in the first year budget change proposal (e.g. handheld radio, CPVE, site surveys).

## **DISCUSSION/PRO-CON ARGUMENTS:**

### **Project Manager Consultant**

The Department hired a project manager consultant on June 12, 2006, to help keep the project on track. The project manager consultant has begun working on the overall project management schedule. The consultant will be responsible for developing the overall project plan, facilitating the working groups, and preparing the monthly, quarterly, and annual status reports related to the CHPERS project.

### **The Independent Verification and Validation Consultant (IV & V)**

The CHP, Telecommunications Section, is in the process of developing specifications for an Independent Verification and Validation (IV&V) consultant to provide assistance with the development of the statewide radio design for the Department's enhanced radio system. The consultant will be responsible for providing assistance with the development and implementation of the CHPERS project. The IV&V will evaluate and ensure project execution meets the implementation goals including, but not limited to, accuracy in the estimation, design, construction, execution, and management of the project.

### **Remote Site Development**

On July 20, 2006, CHP met with the DGS/TD and DGS/RES to discuss the status of the CHPERS project relative to remote site development. During the all-day session, discussions were centered on development and augmentation of the remote site towers, vaults, and equipment as well as current site status. A comprehensive list of current CHP, California Department of Forestry, and privately-owned remote sites was reviewed by the entire team.

DGS/RES will be responsible for conducting asset planning, property acquisition, project management, architectural and engineering services, leasing and planning, property management and building maintenance, construction management, energy efficiency and supply programs, as well as environmental assessments.

DGS/RES is in the process of obtaining experienced consultants to assist with site assessments. Further, in order to ensure that there is adequate radio coverage throughout the state, DGS/TD

will be evaluating the existing remote radio sites for compatibility with the new CHPERS project. DGS/RESO will provide a status of their progress at the August 2006 meeting.

### **CHPERS Executive and Advisory Committees**

The CHP and DGS have developed two high level committees to provide oversight on the progress of the project. The two committees will also resolve any discrepancies immediately that may occur to ensure that the project is not unnecessarily delayed.

### **Project Management Structure and Oversight**

The CHP and DGS, Office of Public Safety Communications Services' (OPSCS) team will be responsible for the project management of this implementation plan. The team will use time-proven project management and coordination practices.

In order for the CHPERS project to meet the schedule, dedicated resources will be required from DGS and CHP. The following membership was established to ensure success of the project:

#### **Executive Sponsors**

Director of DGS  
CHP Commissioner

#### **Responsibilities**

Understanding of Project Progress and Problems  
High Level Decision Making and Project Sponsorship

#### **Executive Team**

Deputy Director, DGS  
Assistant Commissioner, Staff, CHP

#### **Responsibilities**

Secure Funding  
Secure Resources  
Final Resolution of Disputes  
External Communications

#### **Project Directors**

Chief, OPSCS  
Chief, CHP Information Management Division (IMD)

#### **Responsibilities**

Resolve Escalated Problems  
Approve Project Plan  
Approve Change Orders to Project Plan  
Assign Resources per Project Plan  
Review Project Progress

### **Advisory Team**

Chief, DGS Fiscal Services  
Chief, DGS Procurement  
DGS Legal  
Chief, DGS/RESO  
CHP Division Chiefs  
CHP Telecommunications Commander

### **Responsibilities**

Provide advice to the Project Directors  
Resolve escalated problems  
Assign resources per Project Plan

### **Project Team**

DGS Project Manager  
CHP Project Manager  
DGS assigned Staff  
CHP assigned Staff

### **Responsibilities**

Develop Project Plan with proposed resource requirements  
Finalize Project Plan through Executive Team  
Establish Baseline – Schedule, scope, and resources (costs)  
Coordinate work activity within organization  
Monitor project progress versus baseline  
Report to Project Directors on progress  
First level dispute resolution  
Escalate unresolved disputes to Project Directors  
Manage Change Orders – Approve those not involving changes to scope or cost  
Develop Change Order Approval Request for Project Directors – Identify the change and the need for the change and get approval from DGS and CHP Project Directors

### **CHPERS Working Groups**

In July, the following working groups were developed and augmented into the CHPERS project. Working group committee members were identified and will be contacted for meetings starting in August 2006.

The purpose of the working groups is to share collective knowledge and experiences as well as identify Agency partnerships that will enhance the functionality and success of the CHPERS project. The committees will also seek resolution to common problems and plan for the future.

**Remote Radio Site Development** Working group chartered to identify and review current and potential remote radio site development and/or modifications necessary for the success of the CHPERS project.

**Procurement** Identify requirements and processes that will need to be utilized in order to successfully purchase equipment for the CHPERS project.

**Fixed Radio Systems Infrastructure** Work with DGS/TD to help identify the operational requirements in order for DGS/TD to develop the overall system design specifications.

**Mobile Radio Environment** DGS/TD and CHP to develop a consolidated patrol vehicle environment specification that meets the needs of the CHPERS project.

**Radio Communications Interoperability** Identify and establish Allied Agency partnerships that will facilitate radio interoperability.

**Frequency Acquisition** Acquire the necessary radio frequencies in order to expand the existing system in order to provide extra radio channels for tactical and emergency operations without affecting normal daily operations.

**Communication Center** Ensure that communications center equipment is properly designed and compatible with the CHPERS project.

**Partnerships** This committee will identify the possible partnerships with other state and non-state entities that could be a benefit to the CHPERS project by sharing scarce and vital system resources.

Subject matter experts from the appropriate agencies will participate in specific working groups. This will provide a forum for best practices in each of the specific groups and will maximize the use of subject matter expertise. CHP will work with the agencies to obtain the required expertise and maximize time as much as possible. The CHP is in the process of establishing committee meetings for the month of August for all working groups.

The CHPERS Project Plan reflects the most current CHPERS status. The Plan includes scheduled and projected task-level activities.

### **The Project Plan**

- Establish project management structure
- Assign resources to project management structure
- Project Team develops a project plan
- Identify Project Workgroups for Specialized Activities
- Project Plan approved by Executive Team
- Formal approval of the Project Plan and start of project

This project will have executive sponsorship and Project Directors from CHP and DGS responsible for ensuring proposed timelines are met within budget and scope. The Project Directors are responsible for overall task, timeline, and change management.

The day-to-day oversight of the project is the responsibility of the Project Team. The Project Team is made up of a CHP Project Manager, a DGS Project Manager, and assigned technical and administrative staff from CHP and DGS as defined by the Project Plan. The Project Team will provide monthly implementation "report cards" to the Project Directors and Executive Sponsors. In addition, the Project Managers will hold weekly project status meetings with the core project team to identify upcoming work activities, status of planned completion activities, and any outstanding issues for resolution.

The DGS Project Director and DGS Project Manager represent DGS on this project. It is their responsibility to ensure intradepartmental project planning and coordination takes place and commitments are met on behalf of DGS. Professionally trained project managers will be assigned to the various subcomponent projects. Project managers will be responsible for coordinating the efforts of experts in engineering, installation, operations, real estate acquisition, construction, and maintenance.

Each subcomponent project manager will be part of the core project team, and be responsible for reporting project status and progress to the assigned CHP and DGS Project Managers. The subcomponent project managers will hold periodic scheduled project status meetings with their respective project teams.

The Project Directors will also conduct audit and quality process improvement reviews quarterly, and at the end of each major task. The Project Directors will use the results to improve the effectiveness of major tasks not yet complete. The results of these audits and reviews will be submitted to CHP for oversight.

### **Change Management Process**

The Project Team will employ a change management process to address deviations or jeopardies in implementation plans and timelines. When the team identifies deviations or jeopardies in implementation plans and timelines, the DGS Project Manager will prepare a "Change Management Request" (CMR), which includes the following information:

- Description of the deviation or jeopardy
- Reason for the deviation or jeopardy
- Impacts of the deviation or jeopardy (both customer and financial)
- Alternative courses of corrective action
- Recommended change or corrective action and why

The CMR will be forwarded to the CHP Project Manager. On receipt of the CMR, the CHP Project Manager shall approve, disapprove, or request additional information. If the CMR is disapproved, the DGS Project Manager will request a meeting with CHP staff to discuss other possible changes or corrective actions to the deviation or jeopardy. If CHP staff is still not

satisfied with the change or corrective action, the DGS Project Manager will convene a meeting with the Project Directors to facilitate a final resolution or remedy.

### **Dispute Resolution**

The parties shall deal in good faith and attempt to resolve potential disputes informally. If the dispute persists, and the respective Project Directors are not able to agree on a resolution to any particular issue, e.g. Requirements Definition, the issue will be escalated to the Executive Team for resolution. The Executive Team will convene and a resolution decided upon within five (5) state business days from the date the Executive Team convenes. Either Project Director may request the Executive Team to convene, and the Team will convene in person or by telephone within three (3) state business days of such request. The Executive Team will use whatever resources it deems necessary to seek a rapid and just resolution to each issue.

### **Consolidated Patrol Vehicle Environment (CPVE)**

The CPVE is a cost effective solution to improve the efficiency and effectiveness of the patrol officer's vehicle work environment. This includes enhancing existing mobile communications and enforcement equipment via the use of interoperable devices to interface with existing CHP equipment and use of a consolidated upgraded radio infrastructure and telecommunications network. A Request for Information (RFI) was solicited in January of 2006, to interested vendors to provide a solution for the implementation of a viable CPVE system using off-the-shelf available products, and provide supporting product material and cost estimates for networking the existing mobile equipment. Telecommunications Section received and reviewed ten responses to the RFI solicitation with four appearing to have a partial or total CPVE solution based on the RFI minimal requirements. Two responses, one from the original manufacturer (University of New Hampshire Project 54 Team), and the other, an authorized dealer (54Ward), addressed the same CPVE system. The remaining two responses (Visteon Corporation and Infinimode Systems) addressed separate CPVE systems.

Based on the RFI responses, CHP reviewed three vendors (54Ward, Infinimode and Visteon) which appear to meet the minimal requirements for a viable CPVE solution. Infinimode requested an opportunity to demonstrate their approach to the RFI and based on their demonstration, the Infinimode system appears to be a complete solution to the CPVE requirements. Infinimode also expressed they have a CPVE type solution for the motorcycle platform. The Visteon system currently meets the requirements of the RFI, and the CHP currently has deployed forty-seven of these units for evaluation.

The CHP provided Infinimode with the minimal system requirements and defined the configuration for integration into a proto-type system. Infinimode is currently in the developmental stages of completing the proto-type unit for purchase by the CHP. Infinimode representatives will provide a detailed systems design in August for CHP approval before integration into the proto-type unit.

Infinimode is confident that a proto-type unit will be available for evaluation within the next few months. A motorcycle proto-type unit will follow in the subsequent months.

Testing of the Visteon TacNet system continues with favorable results with the upgraded Envoy II (Windows XP operating system). On July 17, 2006, 54Ward had the opportunity to demonstrate their product to the CHP. Telecommunications Section will continue to evaluate 54Ward as an integrated system solution to the CPVE solution. It is in the best interest of the Department that continued evaluation of a potential solution be explored for the possibility of incorporation into the standard operating requirements for a CPVE system.

The CHP continues to work closely with vendors interested in providing a CPVE solution which can be incorporated for the CHP's fleet of law enforcement vehicles. Currently, three vendors have provided the CHP with a viable solution which will be continuously evaluated for possible integration and implementation.

Telecommunications Section will also continue to discuss the software solution for CPVE with 54Ward. Preliminary discussions have provided the possibility of incorporating a hardware design along with their software core system. 54Ward will initiate a conceptual design for CHP and work on a proto-type system in the next few months.

**AFFECT ON EXISTING LAW:** N/A.

**ESTIMATED COST:** Consistent with the Budget Change Proposal for fiscal year 2006/07, the CHP received the first year funding from the Legislature in the amount of \$56,929,855.00. This is a five-year project which was approved by the Legislature in the amount of \$492,394,447.00.

**RECOMMENDATION(S):** The CHP will continue to meet with DGS and the various working groups to discuss the progress of the project and any requirements and/or methodologies to provide efficiencies for the acquisition and development of remote vault sites. The project is currently on schedule and we expect to encumber funds allocated for this fiscal year. The CHP will continue on our current course of action and provide quarterly reports on progress.



---

**SUBJECT: CALIFORNIA HIGHWAY PATROL ENHANCED RADIO SYSTEM  
(CHPERS) STATUS REPORT**

---


**APPROVED:**



M. L. BROWN  
Commissioner  
California Highway Patrol

8/21/06

Date



SUNNE WRIGHT McPEAK  
Secretary  
Business, Transportation and  
Housing Agency

9-26-06

Date



## ISSUE MEMORANDUM

TO: SUNNE WRIGHT McPEAK, Secretary

FROM: M. L. BROWN, Commissioner  
California Highway Patrol  
Phone: (916) 657-7152 Fax: (916) 657-7324  
Email: mlbrown@chp.ca.gov

PREPARED BY: K. P. GREEN, Assistant Commissioner, Staff  
California Highway Patrol  
Phone: (916) 657-7194 Fax: (916) 657-7324  
Email: kgreen@chp.ca.gov

DATE: October 23, 2006

SUBJECT: QUARTERLY CALIFORNIA HIGHWAY PATROL ENHANCED  
RADIO SYSTEM (CHPERS) STATUS REPORT

**Check all applicable boxes:**

- |  |  |
|--|--|
| <input type="checkbox"/> Request for Approval                              | <input type="checkbox"/> Non-Competitively Bid Contract Justification    |
| <input type="checkbox"/> Request for Secretary's Signature                 | <input type="checkbox"/> Other Procurement-Related Document <sup>1</sup> |
| <input checked="" type="checkbox"/> Submittal for Secretary's Information  | <input type="checkbox"/> Feasibility Study Report/Special Project Report |
| <input type="checkbox"/> Request for Discussion                            | <input type="checkbox"/> Rulemaking/Regulation Document                  |
| <input checked="" type="checkbox"/> Response to Secretary's/Agency Request | <input type="checkbox"/> Audit/Investigation-Related Document            |

AGENCY REFERENCE NUMBER: 2006Im0379

TIME FACTOR: N/A.

**SUMMARY:** The California Highway Patrol Enhanced Radio System (CHPERS) project will provide for the development and implementation of a statewide radio communications system which will support the California Highway Patrol's (CHP) primary mission and provide an improved state-of-the-art radio system vital for officer safety and the public safety needs of the citizens of California.

This quarterly report will address the current status of the CHPERS project for the quarter ending September 2006. During this quarter, weekly meetings have been established with the Department of General Services/Telecommunications Division (DGS-TD), Real Estate Services Department (RESA) and the CHP to discuss statewide remote site evaluations and potential frequency acquisitions for the CHP. Radio vault site survey teams have been established and site evaluations began for Valley and Central Divisions in September 2006.

Area assignment and installation schedules have been established for the build-out of 44 Consolidated Patrol Vehicle Environment (CPVE) patrol vehicles. These vehicles will be fully equipped with the Visteon TACNET system. Additionally, vehicles assigned to Area sergeants will also include additional radios for interoperability.

A solicitation package was submitted to multiple vendors for a Risk Assessment and Mitigation (RAM) (formerly known as IV & V) consultant to provide project risk oversight and reporting.

The Radio Communications Interoperability Project (RCIP) is on track with the installation of interoperability (gateway) equipment in all of the CHP communications centers. This equipment will provide interoperability across first responder disciplines and all levels of government during emergency responses and tactical operations. Memorandums of Understanding (MOU) for operation with local allied agencies have been established and obtained by CHP Humboldt communications center.

## **DISCUSSION/PRO-CON ARGUMENTS:**

### **Project Manager Consultant**

The CHP Project Manager consultant will maintain and track activity on a daily basis and provide an updated project report on a weekly basis. The report will monitor project progress versus baseline activity. When a project risk is identified by the Project Manager, the Project Team will be responsible to evaluate, mitigate any risks, and if unresolved, escalate to the next level.

## **The Risk Assessment and Mitigation (RAM) Consultant**

The RAM consultant will evaluate and ensure project execution meets the implementation goals including, but not limited to, accuracy in the estimation, design, construction, execution, and management of the plan. The solicitation package was submitted to 52 vendors on September 13, 2006. The final filing date was September 27, 2006. Two responses were received and reviewed. Interviews have been scheduled for the month of October. It is anticipated that the contract services will commence on November 1, 2006.

## **Remote Site Development**

Site survey teams have been assembled into four groups comprised of RESD Rights Representation, RESD Construction Management, RESD Environmental Planner, RESD Civil and Structural Engineer, CHP Telecommunications Section, CHP Facilities Section, and DGS-TD Telecommunications Engineering. Each group will visit radio sites for the evaluation and assessment of work required to develop existing and/or identify new radio sites.

Site survey teams began evaluations of eight sites for Valley and Central Divisions on September 11, 2006. An additional nine sites were visited on September 26, 2006. The remainder of the schedule will include, but not be limited to, 53 sites for the month of October, 21 sites for the month of November, and nine sites for the month of December. The potential risks for the site evaluations remain the same; the main concern is the potential for unpredictable weather, specifically rain and snow.

RESD will develop an intranet website available to CHP and agency personnel associated with the CHPERS Project. The website will include pertinent data gathered from the radio site evaluation team members, as well as photos of the facilities, surrounding areas, and road access. The website will be on-line in the month of October. Website information will be provided in the next quarterly report.

A Form 22, Public Works Project Authorization and Transfer Request, was processed for the transfer of \$2.1M from the CHP to RESD for radio site evaluation and assessment. It is anticipated that the monies will cover the radio site assessments for Valley and Central Divisions; however, if there is a remainder, the monies will be used for the site assessments in Northern and Coastal Divisions scheduled for FY 08/09.

## **CHPERS Executive and Advisory Committees**

A meeting of the Executive Committee was held on October 11, 2006. The Project Team presented the project plan for input and acceptance. Project risks were identified and addressed, as well as fiscal and planning activities.

## **Project Management Structure and Oversight**

No changes from prior report.

## **CHPERS Working Groups**

The working groups continue to meet regularly to coordinate project activities.

## **The Project Plan**

CHP staff completed the CHPERS Project Plan; the plan includes deliverables, tasks associated with the assessment and build-out of the remote sites, operational and specifications requirements, procurement process, meetings at all associate levels, reporting activities, testing, and implementation.

## **Change Management Process**

No changes from prior report.

## **Dispute Resolution**

No changes from prior report.

## **Consolidated Patrol Vehicle Environment (CPVE)**

Installation schedules have been established for Woodland and Yuba Sutter Area offices. A total of 44 CPVE patrol vehicles will be built and distributed to the Woodland and Sutter Area offices. These vehicles will be fully equipped with the Visteon TACNET system. Additionally, four of the aforementioned vehicles assigned to the Area sergeants (two per Area office) will also include additional radios for interoperability. The 44 CPVE vehicles should be completed and delivered in the fourth quarter of 2006. The deployment of these kits will provide a test bed for the CPVE concept.

The Kenwood Corporation (radio manufacturer) informed CHP their low band radio now complies with the Federal Communications Commission's regulation, as well as CHP bandwidth requirements. They are now compliant for future competitive bids.

The CHP is still pursuing the allocation of 26 pairs of 700MHz spectrum (television channels 60-69) for the in-trunk repeater system. DGS-TD built three portable 700MHz-to-UHF units for the CHP for field testing. The 700MHz frequencies will provide extended range from the portable radio to the vehicular repeater. The extender range will allow the officer to leave the vehicle for longer distances without losing radio communications with the dispatcher, as well as provide better in-building penetration. Field testing will be performed in the fourth quarter. The results will be used for the operational and technical specifications required for the CPVE in-trunk repeater and the portable radio system.

### **Radio Communications Interoperability Project (RCIP)**

The RCIP is on track with the installation of the interoperability (gateway) equipment in all of the CHP communications centers. Eighteen gateway systems have been installed and six will be installed in the next quarter. Memorandums of Understanding (MOU) templates have been developed and are now available on the CHP Intranet website. To date, Humboldt Area has secured 12 MOU's with local allied agencies.

**AFFECT ON EXISTING LAW:** N/A.

**ESTIMATED COST:** Consistent with the Budget Change Proposal for fiscal year 2006/2007, the CHP received the first year funding from the Legislature in the amount of \$56,929,855.00. This is a five-year project which was approved by the Legislature in the amount of \$492,394,447.00.

**RECOMMENDATION(S):** The CHP will continue to meet with DGS and the various working groups to discuss the progress of the project and any requirements and/or methodologies to provide efficiencies for the acquisition and development of remote vault sites. The project is currently on schedule and we expect to encumber all funds allocated for this fiscal year.

---

**SUBJECT:** QUARTERLY CALIFORNIA HIGHWAY PATROL ENHANCED RADIO  
SYSTEM (CHPERS) STATUS REPORT

---


**APPROVED:**



M. L. BROWN  
Commissioner  
California Highway Patrol

10/21/06

Date



SUNNE WRIGHT McPEAK  
Secretary  
Business, Transportation and  
Housing Agency

10-31-06

Date